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ORIGINAL ARTICLES.

THE COLORADO CLIMATE FOR TUBERCULOUS PATIENTS.[1]

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IT may be regarded as proved that tuberculosis of the lungs can not only be recovered from, but that some cases make a perfect recovery without the disease being either recognized or subjected to medical treatment. With this premise made and admitted, it is not incorrect to state that the problem of cure or arrest should assume as great importance as the problem of prevention.

The factors of the problem of cure or arrest are: (*a*) On the one hand, the resisting power of the organism and the influences or conditions that tend to modify that resisting power. (*b*) On the other hand, the virulence or activity of the specific organism causing tuberculosis and the influences or conditions that modify it, and retard or assist its development, either without or within the body.

The most influential factors, both of assault and resistance, are those of environment, and chief among the elements of environment come climatic influences. Equally important, from one point of view, is the environment of occupation, of clothing, and of personal habits; but the correction of faulty conditions in these regards, unaccompanied by climatic change, is likely to be futile in a large majority of cases. The accumulated and disastrous experience of generations of effort proves this most conclusively. Until climatic environment is made favorable, the human organism is at a disadvantage in its battle against the microörganism and those concomitants now almost universally believed to be the cause of tuberculosis.

The study of the bacillus tuberculosis and its life-history has resulted in the discovery of facts that go far toward explaining climatic influences long since appreciated, but not thoroughly understood. For example, it was early observed that the inhabitants of high, dry regions did not acquire pulmonary tuberculosis. We now know that this is because the bacillus loses its vitality forever when thoroughly dried in the direct sunlight of high altitudes. It has been observed that the children born in such regions, of markedly tuberculous parents, are to a remarkable extent exempt from tuberculosis. We now know that this is so because the elements of infection usually transmitted from parent to offspring through the air are, in high, dry regions, rendered harmless while in transit, and we know, too, that this very fact has alone finally controverted and destroyed forever the fallacious belief that tuberculosis is an hereditary disease, transmitted from parent to offspring in genesis. And if that misleading belief should ever prevail again it ought to be negatived absolutely and for all time by the army of robust, healthy, non-tuberculous men and women now in and coming to adult life in the State of Colorado, who are the children of tuberculous parents, and who have been protected from the direct contagion of their parents' disease by climatic environment favorable to their own physical development and unfavorable to the microörganism of tuberculosis.

But the prevention of the development of tuberculous disease, while the great desideratum for the coming generation, does nothing to relieve the patient now suffering from pulmonary tuberculosis. To such invalids medical science has heretofore offered small encouragement of recovery by the use of therapeutic meaures. Change of climate has been the one procedure offering most hope, but this has been recommended in an indiscriminate, or rather, an undiscriminating manner, indicative of lack of appreciation of the true factors of climatic environment that are desirable or beneficial. New countries have always been most highly lauded as places of residence for those suffering from chronic pulmonary disease, and as the country became more settled such places have, as a rule, lost their repute. In the last century New York was the popular resort for cases of this character; later, Ohio, Michigan and Minnesota, North Carolina and Georgia, attained some reputation as health-resorts for tuberculous patients, but failed to maintain their reputation. It has even been said that as this is the common lot of all newly-settled countries, so the eastern slope of the Rockies will, in time, also lose its reputation, and that tuberculosis will make its permanent habitat there also. From any such opinion I dissent. That region presents conditions other than the purely negative one, common to other newly-settled countries, of freedom from the cause

[1] Read before the Forty-fourth Annual Meeting of the Medical Society of the State of Pennsylvania, May 17, 1894.

of tuberculosis until such time as increase of population brings the cause to the country as a permanent entity.

Anti-tuberculous climatic conditions (*a*) prevent the development of tuberculosis and (*b*) exercise an ameliorating or curative influence upon already existing tuberculous lesions.

These favorable climatic conditions are as follows: (1) dryness, (2) sunshine, (3) purity of atmosphere, (4) rarity of atmosphere, within certain limits, (5) equable and moderate temperature. These favorable conditions exist in an exceptional degree and over an extensive territory upon the eastern slope of the Rocky Mountains, in the State of Colorado.

The invalid suffering from pulmonary disease finds much difficulty in obtaining from his medical adviser reliable information or valuable advice in regard to the region in which he is to seek natural conditions that will retard his disease or effect its cure. For this reason I feel that it is an eminently proper thing at such a meeting as this to state as succinctly as possible the climatic advantages of Colorado and to indicate the class of patients that my own experience has shown may be benefited by residence there.

It may not be out of place to bear my personal testimony to the fact that residence in Colorado does retard or cure pulmonary tuberculosis. As an example of the frequency of such cures I may cite the fact that there are forty physicians having offices within a block of my own residence in Denver, and of this number twelve, or 30 per cent., were tuberculous prior to coming to Colorado, but are now in vigorous health and engaged in active practice. Five more of the forty are in Colorado because their wives became tuberculous in the East; all are now in good health. While the same ratio may not hold good for our entire population, it is a fact that an unusually large number of persons formerly tuberculous, and now healthy and vigorous, are to be found in Denver and its sister cities and towns. It is not an exaggeratian to state that probably one-fourth of the population of Colorado came to the State originally because of pulmonary disease in themselves or some member of their families.

Briefly stated, the desirable climatic conditions in Colorado are as follows: 1. *Dryness.* Years ago. this element of our climate was so misunderstood and over-estimated that the whole 103,000 square miles of our area was considered to be desert land—sandy, uninhabitable, and unfertile. This misapprehension was based upon the lack of rainfall. The rainfall is, indeed, inconsiderable, especially when compared with that of the Atlantic coast and of the Ohio and Mississippi valleys. In Denver, for example, the average total annual precipitation for twenty years, which includes both rain and snow, has been but 14.5 inches; in New Haven, Conn., it is 50 inches; in Washington, D. C., 44.8 inches; in Atlanta, Ga., 55.9 inches; in Jacksonville, Fla., 56.3 inches; in Chicago, 36 inches; in New York, 45 inches; in Philadelphia, 41.2 inches; in the State of Washington there are points where the precipitation is 92 inches per annum; and in such foreign resorts as Florence, Italy, it is 41 inches; in Genoa, 47 inches; in Geneva, 32 inches; in Naples, 30 inches; and in Algiers, 27 inches. The wettest place on earth is Assam, Asia, where the average annual precipitation is 610 inches, and in 1861 it was 905 inches. The average rainfall for the whole world is said to be 36 inches per year. When these figures are considered, it is readily seen that Denver, with 14.5 inches rainfall per year, is, relatively, quite a dry location, and it must be remembered that Denver has, perhaps, the greatest amount of precipitation of any location in Colorado. In Montrose, Colorado, there is but 8 inches rainfall in the course of the year. There are certain comparatively inaccessible locations in the United States having drier climates, *e. g.*, Yuma, Arizona, with but 3 inches rainfall per annum, than which there is but one lower record for the whole world, Port Saïd, with the burning winds of the Arabian desert passing over it, which has but 2 inches annual rainfall.

The therapeutic value of a dry atmosphere is twofold: (*a*) It antagonizes the vitality of the bacillus; (*b*) it takes up more moisture from the lungs in respiration, thus removing a greater amount of the toxic results of respiration, and lessening the volume of expectoration; (*c*) it assists elimination from the skin, promotes thirst, and by thus stimulating the patient to fill his bloodvessels promotes the activity of all the emunctories.

In considering the dryness of the Colorado atmosphere, we usually speak, as I have already done, of the rainfall only. A much more valuable observation is that of relative humidity. This means the comparison of moisture actually held in suspension in the air with the amount which it can hold (complete saturation) at existing conditions of temperature and pressure. Manifestly an atmosphere of low relative humidity will more readily cause evaporation from the body, and along with the moisture thus removed go the other organic impurities resulting from respiratory oxidation. A comparison of the relative humidity of Denver and of some Pennsylvania cities and of New York City for the years 1891 and 1892, and of Denver for 1893, is here appended.

	1891.	1892.	1893.
New York City .	75 per cent.	72 per cent.	
Harrisburg . .	70 "	73 "	
Pittsburg . . .	70 "	69 "	
Philadelphia . .	70 "	70 "	
Denver	51 "	51 "	43.7 per cent.

In studying the relative humidity of different cities by months, it is of especial note that the greatest humidity of our Eastern cities is observed in July and August, when the relative humidity of Denver is at its lowest. The period included between the months of February and May is that of our greatest relative humidity, but even these months are drier than the driest months of the cities of the Atlantic coast and in the Ohio and Mississippi valleys.

Great interest attaches to this subject, and it is worthy of more extended study than is possible within the limits of this paper.

2. *Rarity of atmosphere.* This condition varies, of course, with altitude. In its 103,000 square miles of territory—an area almost as great as that of Italy, half as large as France, and seven times that of its great climatic rival, Switzerland—Colorado presents an unsurpassed range of altitude, from 3000 feet above the sea-level on the east, to 15,000 feet, among the peaks of the Rocky Mountain range. The broad, high plateau on this side of the mountains rises so gradually that, while it seems almost level, it yet attains at Denver, which is twelve miles distant from the foot-hills of the Rocky Mountains, an altitude of one mile above the sea-level. The altitude of Colorado Springs is 6150 feet; that of Manitou, 6500; of Boulder, 5300; of Brighton, 4900; of Greeley, 4500; of Pueblo, 4800; of Morrison, 5700. Along Platte and Clear Creek Canons are very many pleasant little mountain-resorts at altitudes varying from 6000 to 9000 feet. Estes Park and South Park are great natural parks whose altitudes range from 6000 to 8000 feet. On the west side of the continental divide Glenwood Springs is at the same altitude as Denver, and presents natural advantages superior to the Hot Springs of Arkansas or to any of the great baths or resorts of Europe. Leadville is 10,000 feet above the sea; Cripple Creek is at about the same altitude.

This cursory statement of the wide range of altitude easily accessible, and at points providing ample accommodations for invalids, gives but the faintest idea of the range of location open to the invalid searching for an altitude best suited to his individual case.

The rationale of the beneficial effects of rare atmosphere is, of course, simple. The amount of oxygen necessary for respiration can be found at high altitudes only in larger quantities of air than at low altitudes. The effort to obtain this causes deeper inspirations, and, as a result, unused or partly solidified areas of pulmonary tissue are opened up by the natural and unstudied efforts of the organism. Theoretically there is much to fear from this effort, especially in patients who have had hemorrhages. Practically this fear has been proved to be quite baseless, except in those whose disease has advanced so far that there is not enough available air-space left in the lungs for free respiration at any altitude. Especially worthy of note is the fact that altitudes of less than 8000 feet are only exceptionally dangerous for hemorrhagic cases; and that, as a rule, if such a case does not improve at 5000 or 6000 feet, it will improve if taken higher after a time. Patients whose progress has been slow in Denver (at an elevation of 5200 feet) have improved more rapidly after a year or two, on removal to Idaho Springs (at an elevation of 7500 feet), Georgetown (at an elevation of 8400 feet), or Leadville (at an elevation of 10,185 feet).

3. *Sunshine.* Reliable sunshine-statistics have not been accessible until within the last two years. This has been partly on account of defective equipment of observers, and partly on account of defective methods of stating the results of observations. What constitutes a sunshiny day has always been a matter of dispute. In 1891 the weather-service adopted the method of making photographic notes of actual hours of sunshine. The records are now beginning to be of value, although the limited number of stations at which such observations have been taken interferes with any extensive comparison. In 1892, Philadelphia had, approximately, 2263 hours of actual sunshine out of a possible 4618 hours—*i. e.*, 49 per cent. of the possible sunshine. In the same year Denver had 2858 hours of actual sunshine out of a possible 4594 hours—*i. e.*, the sun shone brightly during 62 per cent. of the time that it was possible. The difference between 49 per cent. and 62 per cent. of sunshine is relatively enormous. The actual excess of hours of sunshine in Denver over Philadelphia approximates almost two hours every day in the year. To the tuberculous patient this extra amount of sunshine means very much in increasing the daily time during which he can remain out of doors. And it should go without saying that out-of-door life is what every tuberculous patient ought to have. It is ridiculous to travel hundreds or thousands of miles for the benefit of disease by climatic environment and then to coop oneself up in rooms in which the artificially generated conditions are probably as bad as, or worse than, those of the home from which one has removed.

Many unfortunate terminations might be avoided if pulmonary invalids knew enough to take proper advantage of natural conditions. Out-door life, fresh air, and sunshine, are the great requisites, more efficient in Colorado than in most other localities in this country, but of benefit everywhere, if taken advantage of with intelligent persistence.

For this reason most Colorado physicians recommend their tuberculous patients to seek a residence in the suburbs if they remain in Denver, but as a rule to get out of the city if possible. Life on a

ranch or in a mining-camp is preferable to life in a city, if one can only secure the necessities and a few of the luxuries of life. The incipient tuberculous patient who deliberately gives up his regular occupation or profession and goes to "punching cows" for two, three, or four years, is practically certain to effect a permanent recovery, and to gain as well a unique experience as valuable to him as his restored health will be.

These observations comprise a plain statement of actual conditions existent in Colorado, and indicate advantages that will inure to the pulmonary invalid, or "lunger," in semi-facetious Western phraseology, from a residence there.

A disease so essentially chronic in its nature and progress as pulmonary tuberculosis is not susceptible of a *rapid* cure, even under most favorable climatic influences, and in individuals having large natural powers of resistance to the disease. Hence those who attempt its benefit by a change of climate must not expect a radical cure after a short residence in Colorado. It is not unusual to have patients sent us from the East, with the assurance of their home-physicians that a residence of a few months, or at the longest a year, will permanently restore their health, so that they may safely return to their Eastern homes and resume their ordinary occupations. No more fallacious idea could ever be advanced. No assurance could be so utterly unfounded. And yet we meet almost daily with invalids who have come to us holding firmly to this erroneous belief, and who persist in clinging to it in spite of all argument or of iterated or reiterated proof, simply because their physician at home "told them so."

The fact of the matter is that, although we speak of climatic influences effecting a cure, their action is not strictly curative, but they simply tend to retard or arrest the progress of the disease. Some infiltrated areas may, and indeed do, open up again, become pervious, take part in respiration, and finally become perfectly healthy, but the greater part of the pulmonary tissue that is already involved remains so. It is isolated—the disease-process is no longer aggressive, but it is put on the defensive, its area slowly lessens, its infective element dies, and finally fibrous change sets in, converting the enemy's camp into an innocuous ruin.

Under favorable environment the constitution triumphs, but it is not strictly accurate to denominate this triumph as a "cure;" it is a recovery—and a recovery that takes time. From three to five years constitute the ordinary duration of a fatal case of pulmonary tuberculosis. From three to five years constitute the ordinary duration of the process of recovery under favorable climatic conditions. True, there are exceptions, both as to rapidly fatal cases under unfavorable circumstances and rapid recoveries under favorable circumstances. But rapid recoveries are far more rare and far more difficult of demonstration than are rapidly fatal cases.

Now what is the practical meaning of this statement of the time necessary for recovery? It means, for nineteen out of twenty—yes, for ninety-nine out of a hundred—who make change of residence to bring about this recovery, that *the change must be a permanent one.* Five years in a new country mean, for all who are not exceptionally fortunate (or unfortunate), new social and business relations that may preclude the possibility of return to the old home, or that, at least, render such return inadvisable. Then, too, we must remember that return means, too often, resumption of former occupations, renewal of old habits, entrance into old surroundings, which are unfavorable and which tend to cause a second attack, as they probably contributed to the first one. And the universal verdict of Colorado physicians of wide experience is that second attacks of tuberculosis—it would be more accurate to call them relapses—following apparent recovery due to residence in Colorado are rarely recovered from. Time and again our patients who imagine themselves entirely well because a few months have elapsed without serious symptoms, insist upon returning to their Eastern homes to arrange business affairs, to make visits, or to resume their occupations. Arguments, protests, and warnings are without avail, the return trip is made, the predicted relapse occurs (usually disguised as a "cold"), and before the season is out they are back with us, vainly seeking for the second time the gratifying improvement that occurred during their first visit.

We see very many of another class of patients—those who, with far advanced disease of both lungs and with death so plainly stamped upon their faces that the most casual observer could make the correct diagnosis and the certain prognosis, are sent away from home, relatives, and friends upon an illusive chase after strength and health. Patients with their respiratory area so lessened in extent have the inevitable end only hastened in our rarer atmosphere. And far worse is the fact that such fatal results frequently deter really suitable cases from making the essential change of location. It is a regrettable truth that physicians are in many instances responsible for such exhibitions of bad judgment. Another regrettable truth is this: that the diagnosis has in many cases been inaccurate. Indefinite "lung-trouble," "bronchial catarrh," "catarrhal cough," simple "laryngitis," are among the disease-names that we find have been applied in a majority of instances to undoubted cases of pulmonary or laryngeal tuberculosis.

Many patients of this class make a short visit to

Colorado in spite of the advice of the physician at home, who assures them of a perfect recovery if they "take medicine." Their surprise upon discovering actual disease of the lung as a rule only equals their surprise at having the entire thorax examined by percussion and auscultation. Many a tuberculous patient who has "suffered many things of many physicians" gets his first sight of a stethoscope in Colorado—an explanation of the failure to recognize pulmonary tuberculosis earlier in many instances, and a sad commentary upon the careless methods of examination even by capable physicians.

It would not be proper to close this paper without mention of a class of patients that, either from lowered resisting power or because of concentration of the specific pathologic factor, do not recover in Colorado, although they come as early as possible and follow as conscientiously as possible the most approved methods of life and treatment. These cases are not infrequently seen. They belong probably to the class that in unfavorable environment would be denominated acute pulmonary tuberculosis, or in common phrase "quick" or "galloping consumption." Although the climatic influences are not potent enough to permit patients of this class to recover, the favorable conditions do exercise a retarding influence upon the progress of the disease. Not uncommonly persons whose condition is such that six or eight weeks would be the utmost limit of life in a humid atmosphere at a low altitude are enabled to live in comfort and to enjoy life for from six months to two years in the dry, invigorating atmosphere and warm sunshine so constantly present at an altitude of from 5000 to 7000 feet. Such a prolongation of the vital forces means very much to many invalids, and yet this class represents but a fraction of the great and constantly increasing number to whom Colorado climate has brought new health, new vigor, and renewed usefulness in their vocations in life.

A NEW WOOL-TEST FOR THE DETECTION OF COLOR-BLINDNESS.

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THE new test herewith presented is based upon and is a simplification of and improvement on the "color-stick," an arrangement of wools adopted by the Pennsylvania Railroad Company in 1880, and described in their instructions for the examination of their employés, and further in THE MEDICAL NEWS of January 14, 1882; in the *Diseases of the Eye*, by Nettleship; and in the *Popular Science Monthly* for February, 1885, under the title of "A Practical Examination of Railway Employés as to Color-blindness, Acuteness of Vision, and Hearing."

The entire system has been continued on the Pennsylvania Railroad unchanged, giving full satisfaction, and is used as a barrier before every new employé to protect the road from the admission of dangerous men. It has been adopted by the Philadelphia and Reading Railroad Company and by others, as is shown by the replies received in response to a circular recently sent to a hundred of the most important railroad corporations of this country, controlling 129,970 miles, asking if examinations were made as to color-blindness. Thus, it was found that

Those using Dr. Thomson's test controlled	38,786	miles.
Those using other methods controlled	15,679	"
Those making no test controlled	29,428	"
Those making no reply controlled	46,077	"

Sixteen other roads having control of 12,947 miles have also adopted my color-stick, thus making a grand total of 51,733 miles protected by this test out of 142,917 covered by the investigation. The total number of roads included is 116; of these 40 use my color-stick; 11 use other color-tests, mainly Holmgren's; 31 use none; 34 have made no response. The entire system has also been in use on the Midland and on the London and Southwestern in England.

The Pennsylvania Railroad system has accomplished much good, but there is yet much to be done to bring all the roads in the country under the protection of some efficient method of testing, to secure both the roads and the public against loss of life and property from these well-known defects of their employés. The total mileage of the country is 175,233 and there are 1,000,000 employés.

The protection of over 50,000 miles of track by one system is an efficient answer to the charge from England, where the total trackage is but 19,288 miles, that nothing had been done in the United States beyond the passing of a law in the State of Alabama on this subject.

As the result of much experience, and after a recent study of the entire subject, I would suggest some improvements that will enable a new test to be used in connection with the color-stick or as a substitute for it. The color-skeins of this new arrangement have been most carefully selected, and a standard set will be kept, so that renewals may be made of the entire set or of those skeins that may become faded, soiled, or lost. The new set consists of a large green and a large rose test-skein, and forty small skeins, each marked with a bangle having a concealed number, extending from 1 to 40, placed in a

double box, so arranged as to keep the two series apart and to permit each to be exposed upon a table in a confused mass. The stick is dispensed with, as giving too fixed an arrangement to the skeins and not enough *confusion*, although the skeins could be readily removed from their hooks and changed in position for this purpose.

The large green skein being placed near by, the small skeins from one to twenty are exposed in good daylight, and the employé under examination is directed to select ten shades of the same color of the test-skein. One with normal vision will choose promptly and with ease the ten greens with odd numbers on the bangles. A color-blind person will hesitate, and his selections will contain some even numbers, and the confusion-colors will be shades of brown, etc., containing some red, or shades of gray, and will indicate the color-defect. These figures are to be recorded on a blank, and the twenty skeins are to be removed. The large rose skein is then used and the examination repeated in like manner with skeins numbered from 21 to 40, and the result recorded. The confusion-skeins, which have even numbers, are blue, green, and gray. From the selections made by the man found color-defective by the green-test, we are able to decide the character of his color-blindness. Those selecting blues are red-blind; those taking greens and grays are green-blind, according to the nomenclature of Holmgren. There are ten roses and ten confusion-colors in the second series.

The red test-skein of the stick, with its confusion-colors, is omitted entirely, and the test is made to conform more strictly with Holmgren's method, while the examiner is also provided with forty questions of decisive clearness. Greater scientific accuracy is obtained by this method, and with the careful selection of these confusion-colors I now regard this system as an improvement upon the stick, and as a safer and more simple method to be used by a non-professional examiner. The blank will also give to the division superintendent or to any supervising surgical expert a more simple report of the examination. The yarns are to be kept from the light in the double box, one side of which is colored green and the other rose, to aid the examiner in keeping the series separate and to save time. The test will be a valuable addition to those to be used by surgical experts.

In order to show how the Pennsylvania Railroad Company keeps its records of these examinations we submit the following fac-simile of an actual blank:

WEST JERSEY RAILROAD COMPANY.

CAMDEN, January 19, 1883.

Examination of sight and hearing of James A. Morris, aged twenty-two, employed as locomotive fireman, applicant for .....

ACUTENESS OF VISION. The number of the series seen at twenty feet distant.		RANGE OF VISION. Least number of inches at which type D—0.5 in test-type pamphlet can be read.	Right eye, 4½ inches	Left eye, 4½ inches
Right eye	20–30			
Left eye	20–20			
		FIELD OF VISION.		
		Good or defective . . .	Good.	

Color-sense.

Test-skein submitted.	Name given.	Numbers selected to match.
A—Green	Green	3, 26, 24, 7, 11, 22, 15, 5, 1, 17, 28, 9, 19, 30, 13
B—Rose	Red	37, 33, 29, 12, 39, 31, 21, 35, 25, 27, 23
C—Red	Red	37, 33, 31, 35, 23

Second Color-test.			Third Color-test.		
Number shown.	Name given.	Numbers selected.	Flag shown.	Name and use given.	Numbers selected.
24	Green.	26, 22.	Soiled White.	Safety, White.	2, 4, 6.
39	Yellow red.	Could find no match.	Soiled Green.	Caution, Green.	36, 38.
30	Blue.	26.	Soiled Red.	Danger, Red.	37, 33, 31.

Selection prompt or hesitating:

Prompt.

Hearing.

Right Ear.		Left Ear.	
Watch.	Conversation.	Watch.	Conversation.
8 feet.	20 feet.	8 feet.	20 feet.

Remarks:

Escaping steam prevented watch-test.

J. J. BURLEIGH, *Examiner.*

Acuteness, right eye defective. Range, good. Field, good. Color-sense, defective. Hearing, see Remarks.

JOS. CRAWFORD, *Superintendent.*

NOTE.—Those approved, marked "Appd."
Those not approved, marked "Not Appd."

It may be of service to present to the surgical experts in charge of the examinations of the various railroads the means that I have adopted for my own guidance in giving my final decisions. From the numerous methods described by scientific authorities I have selected ten that are practical, simple, and especially fitted for the detection of color-defects in employés of railroads. A book of record should be kept in which each case, with the results of the testing, should be entered. The Pennsylvania Railroad

system provides that the preliminary examination should be made under the direction of the division-superintendent by non-professional examiners, but it is to be under the supervision of one professional competent surgeon, who is known as the surgical expert, who becomes responsible for the qualities of the tests, and who gives the final decision in all cases referred to him. Thus the men are protected from the errors of lay-examiners, and do not lose their places until pronounced defective by professional authority. With ordinary care no color-blind man should escape detection by the lay-examiner, but men really fit for the service might be unfairly treated.

When referred to the expert the man found color-blind will present himself with the blank of his examination, and the surgical expert will then corroborate this by the following means:

1. The stick or the new test-skeins; or both.

2. Holmgren's set of one hundred of fifty various-colored skeins will be used and the proportion of mistakes recorded.

3. Browning's pocket spectroscope will then be used, and the man be directed to describe the colors he sees when looking through the instrument. If color-blind he will say that he sees but two colors, yellow and blue, with a gray or a neutral band between then.

4. The color-tables of Stilling will then be used; these are so arranged that on a colored background letters and figures are printed in the confusion-colors of this background so as to be indistinguishable by the color-blind.

It now becomes requisite to test the central vision, and to determine the power to perceive the signal-colors that are used by night.

5. A piece of dark cobalt-blue glass should be used in the trial-frame over each eye separately, and the man be directed to look at the flame of a candle or other small light, from a distance of twenty feet. An eye normal in refraction and color-sense sees the light, colored rose or pink, surrounded by a blue halo. To a hypermetrope there may be a blue light, with a ruby-colored ring or halo; but two colors will always be seen, whilst the color-blind man sees but one color, blue, or a light spot with a blue halo.

6. Donders' instrument has a standard candle in a dark cylinder, with a wooden disc, and pieces of red, green, blue, and white glass so arranged as to be rotated in turn in front of the flame. Here also there is a metallic slide, with perforations ranging from one to twenty millimeters in diameter. The man is placed five meters away, and while the colors of the light are changed by rotating the disc he is challenged to designate the colors of the transmitted light. The normal eye recognizes them through the 1 mm. opening at 5 m.; or, better still, the candle is so placed that the examiner with normal color-sense just perceives the color through the 1 mm. opening at 5 m. The color-blind individual may fail through a series of openings until the 20 mm. one is presented. He may still call white green, and red green. If so, he is asked the significance of the green, and answers "caution." He is then requested to approach the light slowly, and as he does this he may perhaps at one meter or one-third of a meter, by its intensity or size, recognize and call it red. Using the same ratio for his color-blindness as we employ for his acuteness of vision, we can reason thus: Full color-sense enables one to see the lights promptly at 5 meters through the 1 mm. opening; if the man sees them only after the apertures have been increased, his color-sense must be defective. Thus, if an opening of 20 mm. is needed, the color sense $= \frac{1}{20}$; should the man fail with the 20 mm. opening at 5 m. he is told to approach it, and if he sees it at 1 m. he has $\frac{1}{100}$ of color-sense, and if at $\frac{1}{8}$ of m., or 1 foot, he has only $\frac{1}{800}$ of the normal power. The mere diminution of white light, by interposing pieces of London smoke, may induce the color-blind to pronounce it in turn white, green, and finally red.

7. A tin lantern, with a switchlight condenser having a four-inch opening arranged so as to admit of placing pieces of white (ground), green, red, blue, and London-smoke glass before it, is now employed. This could also be made to take the place of Donders' instrument, if covered with a front, and with a sliding-piece with small perforations. A man failing to recognize the light from a four-inch aperture leaves no possible room for doubt, and this fixture is useful in convincing the friends of the man, and any railroad officers who may desire a rude test. The light is in diameter 100 mm., and should be seen at 500 meters.

8. The instrument of Mr. Carter, of London, is then made use of. This is to guard the surgical expert against a hasty opinion, and is to act as a check upon all wool-tests. It is based upon the sensibility of the retina and its power to recognize form and color in various intensities of light. The surgeon and the man examined regard the tests simultaneously while the quantity of light is varied; thus, possible errors with other tests, especially Holmgren's, can be avoided.

9. In Dr. Chibret's instrument, by means of polarized light various colors may be produced at will. The color-blind betray themselves by placing the instrument so that two dissimilar discs of light appear to them alike.

10. Finally, an assortment of flags that have been in actual use, ten of each color, white, green, blue, and red are used as a test. These are thrown

down in a confused mass on the floor, and the man is directed to properly assort them. Astounding mistakes are often made; as, for example, when a man is directed to take a red flag and use it to protect the rear of a train, he may select a green one.

A profound understanding of this curious defect of color-perception must be acquired to enable the surgical expert to make the best use of these various methods, and whilst they are sufficient they are decisive and require but little time. Perhaps the transcript of one case from my record-book may illustrate these brief descriptions:

J. H., employed by the Pennsylvania Railroad Co., forty three years old; found defective, and referred for final opinion.

Color-stick: With green, selects Nos. 1, 2, 3, 4, 6, 7, 11, 13, 15, 17; with rose, selects Nos. 22, 25, 21, 27, 28; with red, selects Nos. 31, 32, 33, 34, 37.

Holmgren: Green, selects 2 greens and 21 confusions; rose, selects 5 greens, with 13 confusions; red, selects 8 greens, with 9 confusions, 2 greens.

Donders: Fails at 5 m. on all apertures; fails at 1 m. on all apertures; ⅓ m. on all apertures.

Calls, with 20 mm. opening, green red; red green, and white, light-red.

He made more mistakes than successes, with gray (London-smoke glass) over white; called it red and green, as light was increased or diminished, and finally declared that he had never seen such lights on a railroad.

Failed with switchlight, 4 inches in diameter, at 5 m. and at 1 m., and manifested a color-blindness or defect greater than $\frac{1}{500}$, as he failed to see at 1 m. what a normal eye would recognize infallibly at 500 meters.

Cobalt-glass: Sees white light with blue halo; no red or rose.

Flags: At 1 m. calls dirty-white green; fails to distinguish red from green. He was then told to select from a pile of flags the danger-signal, or red one, and to hurry back and protect his train; with his own hands and deliberately he chose six—three red, two green, and one blue—stating that "they would all stop trains."

Stilling's tables: Fails in all but VII, which should be recognized by a color-blind.

Pronounced color-blind and unfit for any duty in which he would govern his actions with color-signals.

I will conclude by urging the need for reëxaminations at stated periods, and in individual cases when a man has been injured, or has recovered from a serious illness, or when he uses tobacco or alcohol to excess.

The test here described can be obtained of Queen & Co., of Philadelphia.

The Twelfth International Medical Congress will be held at Moscow in August, 1896.

THE TREATMENT OF ACRO-PARESTHESIA (NUMBNESS OF THE EXTREMITIES).[1]

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IN 1884 I read before the College of Physicians of Philadelphia a paper on a form of numbness which occurred principally in the upper extremities; and my observations showed that it was usually met with in women at about the change of life, although it occasionally occurred in men. I regarded it as a vasomotor neurosis, because of the circumstances under which it was most likely to occur, and because it seemed to be one of the annoying symptoms which belonged to the menopause. Dr. James J. Putnam had already described some cases of the same kind, and suggested that the affection was probably due to alteration in the blood-supply of the terminal nerve-branches. Omerod, who had also written on numbness of the extremities, believed the condition to be allied to Raynaud's disease, and probably the result of vascular spasm.

"Waking numbness" is a condition which has been recognized for years, and recently several articles on paresthesia of the extremities have appeared. The view now generally held in regard to this disorder is that it is a form of peripheral neuritis. Collins[2] has recently presented an interesting paper on this subject, and analyzes forty-three cases of the affection. He holds that the trouble is due to defective innervation of the bloodvessels, which causes a low degree of blood-pressure and lack of proper blood-supply to the terminal branches of the peripheral nerves. He thinks that the most striking factor in the etiology of the affection is occupation, as he found that 75 per cent. of his patients were women who did either washing, sewing, scrubbing, or needle-work of some kind; and he believes that bodily fatigue, over-exertion, and poor nourishment are predisposing factors.

Schultze[3] reports twelve cases of acro-paresthesia, as he calls the affection, and makes an elaborate study of the symptomatology. He thinks the symptoms are all opposed to the theory of peripheral neuritis, but believes that the disease is somewhat analogous to neuralgia. He considers the etiology obscure, and regards manual labor as having but little influence. He admits that many cases occur at about the climacteric, but says that the influence of that period is wholly unknown. He states that he has found treatment not very efficacious; that drugs are of no use, except to relieve pain, when

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[1] Read by title before the Pennsylvania State Medical Society, May 17, 1894.

[2] Journal of Mental and Nervous Diseases, August, 1893.

[3] Deutsche Zeitschrift für Nervenheilkunde, 1893, iii, p. 300.

present; but that electricity, warm baths, and warm applications may do some good.

Friedmann[1] regards the affection as independent and individual, but harmless, notwithstanding its persistency. He also refers to the menstrual period in women as influencing the onset of the disease. He is disposed to ascribe the trouble to general anemia, with a weak circulation, and thinks that there is often some cardiac affection, usually a slight amount of fatty degeneration. He divides the affection into four classes: the acute and the chronic; a form in which the symptoms begin suddenly and are associated with vertigo (this variety is probably due to some brain-lesion); and a fourth class of cases, in which there is a tendency to rheumatic troubles. He is inclined to refer the trouble to two pathologic conditions: passive hyperemia of the extremities and irritation of the peripheral branches of the nerves. In treatment he recommends electricity, tonics, and cardiac stimulants.

Laquer[2] analyzes eighteen cases in women between thirty-five and forty, and recognizes the features as described by Schultze; but, contrary to that observer, regards the influence of hard work with the hands as being of great importance in an etiologic relation. He regards the affection as a neurosis due to exhaustion.

The observation of a considerable number of cases since 1884 has confirmed the views which I then expressed as to the pathology and etiology of the disease. There is probably in all cases of paresthesia some change in the blood-supply of the peripheral nerves. In those of an intermittent character there is only hyperemia; but in others in which the symptoms are constant, there is, no doubt, a slight but distinct inflammation of the terminal filaments of the peripheral nerves. A patient whose case I have already related[3] illustrates the influence of the menopause in causing paresthesia:

Mrs. Y., forty-one years old, was referred to me by Dr. Oliver P. Rex. Her menstruation had been regular until six months before, when there was a cessation for seven weeks, and then a uterine hemorrhage occurred. An extra-uterine pregnancy was diagnosticated, and at the end of three months celiotomy was performed and a fetus and both ovaries removed. The patient made a good recovery and got up at the end of three weeks. Soon after this she began to have flushes of heat several times a day. Three or four weeks later she had attacks of numbness in the right hand when she awoke from sleep. At first there was only numbness, but later there appeared a sense of prickling and pain, which would awaken her from sleep. In a few days both hands were affected, and they soon became numb all the time. The numbness was most intense in the afternoons, and especially in the distribution of the ulnar nerve. When the woman went to sleep the whole arm became numb and painful, and she was awakened by the sensation. Sleep was, therefore, almost impossible and she walked the floor most of the night. When I saw her this trouble had existed for five weeks; the temperature of the hands was normal, tactile sensation, localization, and appreciation of compass-points were unchanged; but the patient was awkward about sewing and the use of her fingers generally.

In this case the premature induction of the menopause by the removal of the ovaries brought on the vasomotor symptoms which belong to that condition when it comes on naturally, and the symptoms were more intense than those met with under ordinary circumstances. Complete relief was afforded by the administration of ergot.

Various writers have suggested different plans of treatment for this form of paresthesia. Putnam recommended strychnin, phosphorus, and potassium bromid, with the use of galvanism. Omerod found potassium bromid useful. Collins believes that there is no specific remedy, but regards prolonged rest, with restorative treatment, the most beneficial therapeutic measure. The use of the faradic current he considers helpful, but he believes a general tonic plan of treatment, with out-door life and change of occupation, of the most importance. In my paper to which I have referred, I stated that the treatment that I had found most useful was the administration of ergot, and that I had used this drug with the belief that the cause of the paresthesia was a hyperemia of the nerve-trunks or of the terminal filaments. As ergot is supposed to cause contraction of the arterioles, it seemed the proper remedy. I also suggested that in some cases there might be congestion of the cervical enlargement of the cord, from the fact that the numbness is often bilateral, and that the attack is most frequently induced by sleep. More extended experience has confirmed the belief in the utility of ergot in this disease, and I shall cite two illustrative cases:

Mrs. D., thirty-four years old, has always been healthy. Menstruation has always been scanty, and before marriage painful. She has been married twelve years and has had four children. She has had a slight attack of rheumatism, followed by pain in her left side, which becomes weak from overwork. Recently she has had great care and worry in nursing two sick children. Five or six months before coming under observation she began to have a sense of numbness in her shoulders, which extended to the epigastrium, and then appeared in the hands and feet, changing its location from one foot to the other during the day, but becoming

[1] Deutsche Zeitschrift für Nervenheilkunde, 1893, iv, p. 450.
[2] Neurologisches Centralblatt, March 15, 1893.
[3] "Remote Results of Removal of the Ovaries and Tubes," University Medical Magazine, December, 1891.

much worse at night. There is a continual sense of numbness of varying degree in the fingers and hands. It becomes painful in the early morning, but after use of the hands and arms for a time there is less intense prickling, and she is able to go on with her work. There is no anesthesia, and with the dynamometer the grasp of the right hand is 100, that of the left 90. There is no change in the temperature-sense. The patient was very anemic, and was ordered twenty drops of the tincture of ferric chlorid three times a day, and advised rest and good food. She followed this treatment for two weeks and then reported that she was not so well. She was looking better and was less anemic, but complained of an increase of the numbness in the hands, arms, and feet, and had some dizziness and precordial pain. She took iron in full doses for a month. At the end of that time the paresthesia was no better, if anything, worse; and she was then ordered gtts. xxx of the fluid extract of ergot, three times a day. In two weeks she reported that she was very much better, having taken the half-dram doses of ergot steadily. She was now ordered to return to the iron, and took this for two weeks, when she again reported that the numbness in her hands had increased. Ergot was once more prescribed, with immediate relief to the symptoms, and she took this remedy at intervals for some weeks. There was a return of the numbness several times, but it was always relieved by the administration of ergot.

Mrs. B., thirty-three years old, has two children, and has always enjoyed excellent health, with the exception of an attack of chorea, which lasted from the twelfth until the fifteenth year, since which time she has always been somewhat "nervous." She is a very healthy-looking woman, with bright color, and is in good flesh. The urine was found to have a specific gravity of 1018, to be slightly acid, and contained neither albumin nor sugar. She has had some dysmenorrhea since marriage, but menstruation has otherwise been regular and normal. About three months before coming under observation she began to have numbness in the left hand on rising in the morning. This soon extended to the right hand, and then became painful. The numbness and painful prickling soon extended to the shoulders. In a few days sleep became disturbed, and soon the numbness was so great that she would be awakened by it soon after falling asleep, so that for several weeks her rest was greatly broken. Within a few weeks the numbness extended to the feet and legs during sleep. There is no loss of sensation, and the patient is able to use the hands in sewing and in performing other acts. She was ordered a pill of ergotin, grs. ii, and the extract of cannabis indica, gr. ¼, three times a day. In three or four days she reported very marked relief from the numbness, and the dose of ergotin increased to grs. vi *ter in die*. In two weeks she stated that she was very much better, that the numbness had left all of the extremities except the left arm, and it was here very much less. She was then directed to withhold the ergotin and to take lithia-water freely. She remained free from the numbness for two weeks, when she had a sharp attack, chiefly affecting the fingers and hands. She was then ordered to renew the pills of ergotin and cannabis indica, and in a few days reported complete relief. She was still nervous, and was given a pill of iron valerianate, quinin, and strychnin, and has remained free from any numbness up to the last report that I have had of the case.

While ergot relieves very quickly the numbness and painful formication in these cases of paresthesia, it is always necessary to use additional means for the improvement of the general nutrition. Massage is of great value, and general faradization is also useful. Change of air, and tonic doses of iron, quinin, strychnin, usually effect a cure after the relief of the symptoms by ergot. There are cases of paresthesia which are due to lithemia, and these usually yield to appropriate anti-lithemic remedies.

ORIGINAL ADDRESS.

ADDRESS ON OBSTETRICS.[1]

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IT may seem at first thought the part of presumption for a surgeon to attempt the address upon obstetrics. But this may be condoned when we appreciate that obstetrics and the surgery of women have been so long associated in teaching—the one almost considered an outgrowth of the other—and that it has been customary in this Society to consider the discussion of gynecologic subjects as eminently proper in the obstetric address. We have still less hesitancy to conjoin the subjects, as we shall in this paper, when we appreciate that the nearer we approach the surgical standard of antisepsis and asepsis in every case of confinement the better are the chances of the patient and the less the danger of subsequent distressing sequelæ. We do not propose to attempt a *résumé* of the field of obstetrics or gynecology, but shall consider a few of the more important conditions from a surgical standpoint.

Symphysiotomy. The revival of this operation by the Italian surgeons almost threatens to again divide the obstetric world into the Symphyseans and Cesareans. We owe a debt of gratitude to Dr. R. P. Harris for the careful and painstaking manner in which he has presented the history and statistics of this and the subject of abdominal extraction of the fetus, by which our ability to save life has been enhanced. Like all new or revived procedures, symphysiotomy has been performed unnecessarily or in unsuitable cases, and, in consequence, the procedure is brought in some degree into discredit. Enough has been done to demonstrate that we have in this procedure an operation capable, within certain limitations, of decreasing the danger for both mother and child. It serves to bridge over the gap between forceps delivery and Cesarean section, formerly considered as affording greater safety for the mother through embryotomy. The limit below which symphy-

[1] Read before the State Medical Society of Pennsylvania, May 16, 1894.

siotomy should not be performed has been fixed at 6.75 cm. (2.7 inches). This is also the maximum limit for generally successful craniotomy.

Some of the objections that have been raised against symphysiotomy are: (1) that it is a difficult and tedious operation; (2) a second operation is required to deliver the child; (3) the occurrence of injury to urethra or bladder; (4) the danger of sepsis. It cannot be denied that there is some basis for these objections, but the procedures we would substitute cannot be said to be free from disadvantage, and when we consider that through the procedure under discussion one individual is afforded an even chance for life, we may overlook its minor disadvantages. Indeed, we feel that we may now hail the day for which some of us have been so earnestly pleading, when craniotomy upon the living child may be considered as a relic of barbarism, and no longer a justifiable procedure.

If the surgeon may be permitted to suggest rules for the government of the obstetrician attempting to save the life of the unborn, it would be as follows: (1) careful examination should have been made of every patient prior to her coming into labor, in order to determine the size and condition of the pelvis; (2) when previous labors have demonstrated the inability of the patient to deliver herself at full term with safety to the fetus, and examination discloses this to have been due to a faulty condition of the pelvis, measures should be instituted to insure the most favorable termination of the approaching labor for the child, whether that be by the use of forceps, version, symphysiotomy, or the Cesarean section; (3) when the conjugate is above 9.4 cm. (3¾ inches) forceps should be employed or version should be practised; when between 9.3 cm. and 6.75 cm. (3¾ inches and 2.7 inches) symphysiotomy should be performed, followed, if necessary, by the use of forceps; when below 6.75 cm. Cesarean section should be the elective operation for both mother and child. It may be asserted that the patient will not consent to a cutting operation, preferring death to her offspring, but the physician should place himself firmly in the position that he has two lives in his hands, each of which is entitled to consideration, and if the mother declines a procedure that affords her a reasonable chance of restoration to life and health, and a chance for her offspring, such declination does not justify the physician in being not only accessory to the taking of human life, but its actual destroyer. If he is forced by this stand to give up his patient, he will at least have the satisfaction of feeling that he has stood up for the rights of a being unable to speak for itself.

When it can be demonstrated by the length of time the woman has been in labor, by the physical signs, and by the absence of the heart-sounds that the fetus is dead, that method of delivery should be adopted which will expose the woman to the least danger and discomfort. When the woman has been in labor for some time, and the uterus has been contused and injured to such a degree that its structure is likely to become gangrenous, the better plan of procedure will be a modification of the Porro operation. I say modification, for the reason that I do not think it wise in any such case to treat the stump externally if we can so arrange matters as to completely close the abdominal wound. This can be done by the entire or complete extirpation of the uterus, or the removal of the organ with the exception of a small portion of the cervix which projects into the vagina. In such cases the peritoneum should be closed over the stump, to exclude it entirely from the peritoneal cavity. Drainage may be secured by packing the cervix with iodoform-gauze, which may subsequently be removed through the vagina.

Placenta prævia. The one condition in which the future of the fetus should be ignored is placenta prævia. This is particularly true in the cases of central insertion of the placenta. Thus, when a patient begins to have hemorrhages as early as the fifth month, coming on suddenly without any warning, possibly while lying in bed, and becoming so severe as to endanger her life, with the knowledge that she may at any time die from an uncontrollable hemorrhage, and the improbability that the fetus will reach a viable age, there should be no question of the wisdom of evacuating the uterus, and thus afford the patient the best chance for life. In such cases the more rapidly the labor is induced the better it will be for the patient. We may, oftentimes, under the influence of an anesthetic, succeed in dilating the cervix until it will admit two fingers, and then by the Braxton-Hicks method perform podalic version and draw a leg of the child into the cervix and control the hemorrhage until the labor is completed.

Sepsis. The laity has become so well informed of the causes of diseased conditions that it has become a discredit to the obstetrician to have a case of sepsis develop in his practice. While even the most careful man may not be able to escape the development of such conditions, it must not be forgotten, however, that the infection takes place through some unguarded avenue, and the patient becomes the victim of a grave condition. This may manifest itself, of course, in a variety of ways, some of which are amenable to prompt measures, while others will be beyond control from their inception. Infection by the genital tract, as in other portions of the body, may involve the general system and affect the tissues in several different ways. One is by continuous and contiguous extension. Thus, inflammation may extend through the mucous membrane of the uterus to that of the tubes, and finally to the peritoneal cavity; or we may have the infection enter the system through the bloodvessels or the lymphatics. The manifestations of the disease vary greatly according to the method by which the infective agents gain entrance. The more rapid and more virulent form of disease is that in which it enters through the bloodvessels. The most difficult form to manage is that in which it has entered through the lymphatics, forming secondary abscesses in the lymphatic glands. Inflammation extending through the uterus and the ovaries is particularly destructive of the function of reproduction, but it is more self-limited as regards the individual than when the poison enters through other avenues. Thus, the infection and establishment of inflammation in the tubes lead to increased secretion, which coming in contact with the peritoneum sets up at once an inflammation that closes the abdominal end of the tubes, so that a sac is formed, including ovary, and resulting in a tubo-ovarian abscess. The disease becomes self-limited, and results in the formation of abscesses which are necessarily a source of peril to the life of the individual until relieved by operation. With

this knowledge of the progress and results of septic troubles, it is incumbent upon us early to be on our guard regarding the danger of such conditions.

The symptoms of sepsis are: Chill, fever, pain, tenderness, and offensive discharge. In every case of rigor, an elevation of temperature should not be considered as an indication of a beginning septic process, but it should certainly be a warning to lead us to investigate thoroughly as to its cause and watch carefully the subsequent progress of the case. Should the condition not yield promptly to suitable treatment, or should it be accompanied by an offensive discharge, we must not be content with anything less than a complete sterilization of the cavity of the uterus. This cannot be accomplished by mere irrigation with antiseptic solutions, for the uterine cavity is lined with débris, the surface only of which is affected by irrigation, while in the deeper portions germs continue to multiply and ptomaïns develop, the absorption of which causes the elevation of temperature. The proper plan of procedure would be the cureting of the cavity of the uterus with a sharp curet, subsequent irrigation successively with hydrogen dioxid, sublimate solution, and finally sterilized water, after which, in order to make sure of separation of the uterine walls and thorough drainage of the cavity, the uterus should be packed with a good-sized twist of iodoform-gauze. This serves several purposes. It affords drainage through its capillary action; it keeps the surfaces of the uterus apart; it stimulates increased discharges of serum and consequent depletion of the walls; and finally, by its presence as a foreign body, it stimulates uterine contractions, thus diminishing the facility with which the material can find entrance into the sinuses.

This plan of procedure, carried out sufficiently early, will prevent further extension, but when the disease has already extended and secondary foci have formed in the uterine sinuses, in the lymphatic glands, in the Fallopian tubes, or in the peritoneum, the operation will not be an entire success. In such cases it may be necessary to resort to more radical procedures. Should the temperature of the patient continue high and rigors occur, we should feel assured that secondary foci had already developed, and if examination failed to disclose disease in the tubes and ovaries, early section should be resorted to, in order to disclose definitely the condition of the uterine walls. Not infrequently we shall find that the uterine sinuses contain pus-collections, and in such cases the elevation of temperature is very marked and the condition of the patient is an extremely critical one. In such cases, by all means the best method of procedure is extirpation of the uterus. Exploratory section, at at least, should be made with a view of ascertaining, so far as possible, the condition of the uterine walls. Absence of any disease in the uterus should lead to exploration of the tubes and ovaries. If the latter organs are considerably enlarged, it would be well, after carefully packing about to protect the abdominal cavity, to puncture the ovary with a clean knife and ascertain the character of the fluid causing its distention. I have reported a case in which the ovaries were removed because they were quite large, and in which careful examination disclosed that there was no sign of disease in the uterus. The left ovary, the larger, was opened after its removal and found to contain a teaspoonful of foul, greenish pus. Although the patient had repeatedly a temperature reaching 106°, and one of 104° at the time of the operation, her temperature soon became normal and convalescence was uninterrupted.

The presence of masses of exudation in the pelvis, accompanied with tenderness and elevation of temperature, should be considered an absolute indication for resort to abdominal section. It is true that in some cases of this kind the exudation may be absorbed, and the patient slowly convalesce; but it will be found that the patient is crippled, and that adhesions have occurred between the ovaries and tubes, binding them down, oftentimes completely involving the tube and ovary, and producing a painful condition which leads to semi-invalidism.

Vaginal Hysterectomy. The rapidity has been unexampled with which this operation has been accepted by the general profession. The operation was introduced for the relief of patients suffering from carcinoma of the uterus. While its practice for this purpose is rarely questioned, the indications have been extended, so that the operation is now considered advisable in cases of fibroid tumor of small size in the wall of the uterus or within its cavity, giving rise to profuse bleeding, marked prolapse of the organ, and finally, in cases of sepsis when it is recognized that the disease involves the uterine walls as well as other pelvic structures. Some have gone so far as to claim that the uterus is a mere excrescence in every case in which it is necessary to resort to the removal of the ovaries and tubes. While we would not assent to this, we do believe there are many cases in which the inflammatory or suppurative processes involve the uterine walls and in which the patient would have a much better chance for recovery if the entire uterus were removed, and even when recovery from the operation has taken place, the patient has suffered and remained crippled as a result of the uterine inflammatory process.

Vaginal hysterectomy is an operation not difficult of performance in ordinary cases, and one in which the mortality is not great. I have had twenty-seven cases of vaginal hysterectomy, with two deaths, neither of which could be directly attributed to any fault in the operation. The first patient died from tetanus at the end of the fourteenth day; in the second case, a violent attack of catarrhal jaundice developed on the second day in a woman who had been subject to attacks of hepatic inflammation, and who died at the end of a week. In the second case there was intense jaundice, discoloration of the urine, absence of bile from the feces, exceedingly slow pulse, generally normal or sub-normal temperature, and finally delirium and coma.

During the past summer a homeopathist of Chicago gave wide circulation to what he claimed as a new method of hysterectomy, which was simple, safe, bloodless, entirely obviating the necessity of either clamp, cautery, or ligature—a major operation converted into a minor one by a simple process of easy dissection. This operation consisted, after cutting through the vagina, in pushing off the tissues from the structure of the uterus, and performing a practical enucleation of the organ. As the large uterine and ovarian vessels do not enter the uterus directly, but form anastomotic communication in either broad ligament, from which numerous small vessels are sent into the organ, you can readily see that by pushing off the tissues and tearing these

vessels, the ragged edges contract, close the orifices, and prevent hemorrhage. There are cases on record in which a midwife has torn away the entire uterus when inverted, supposing it to be the placenta, and the patient recovered. Investigation of the literature of the profession discloses that this operation is not a new one, but was suggested by Langenbeck as early as 1813.

The operation of enucleation, however, is a slower one. There is increased danger, particularly in cases of carcinoma of the body of the organ, of leaving a portion of the infected tissue, and I must individually confess to a certain amount of anxiety and fear as to the certainty of controlling the hemorrhage. As the clamps are applied the operation is a speedy one, and we have no fear that hemorrhage will subsequently occur. The same method of operation has been utilized in abdominal hysterectomy, whether the entire or only a portion of the uterus is removed.

Eastman has devised a saw-like knife with which, after the fundus is fixed, he proceeds to separate the tissues, tying the ovarian artery on either side, and then tearing off the tissues remaining, not even using a ligature for the uterine arteries. Whether we have the courage of Eastman, to tie only the ovarian arteries, and practically tear away the other vessels, the general principle remains accepted that in removal of the uterus through the abdomen, whether for growths or for malignant disease, either the entire organ, or all but that part of the cervix remaining within the grasp of the vagina, should be included. When a portion of the cervix is left behind, it should be dilated, its canal sterilized with the thermocautery or strong carbolic acid, and a rope of iodoform-gauze carried through it to afford drainage from the raw surface above it. The peritoneal flaps should then be closed with a continuous suture of fine silk, catgut, or kangaroo tendon.

The advantages of such a procedure over the old extra-peritoneal method are: 1. That we are enabled to close at once the external wound, thus greatly hastening the recovery of the patient. 2. The strong retraction of the stump and closure of the wound by a granulating process is avoided. 3. The danger of subsequent hernia through an abdominal wall, weakened by the placing and subsequent retraction of the stump, is greatly decreased. 4. The probability of sepsis is lessened.

CLINICAL MEMORANDA.

A CASE OF ACUTE DELIRIUM.

With some Considerations on its Pathologic Aspects.

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AUTHORITIES are at such variance as to the existence or non-existence of brain-lesions in acute delirious mania that I deem the following case of especial interest, presenting as it does both macroscopic and microscopic lesions of some import:

L. S., a colored farm-laborer, twenty-five years old, was admitted to the New Jersey State Hospital at Morris Plains, April 27, 1894, with the following history: The patient had always been regular in his habits and industrious. About one week before admission he suddenly manifested maniacal tendencies, and threatened his employer's life. The authorities immediately took him in custody, and after a sojourn of about one week in the county jail he was brought to this institution in restraint. The patient was so much exhausted that for a short while after admission he was very quiet; but he soon became maniacal, singing and shouting at the top of his voice, and pacing about the ward in an excited manner. He slept very little during his first night in the institution, and was considerably excited during the next day. He took a little food at dinner-time, and slept during the following night under the influence of paraldehyd. On the next morning he seemed very quiet, but listless, occasionally ejecting a quantity of greenish, frothy material from his stomach. Nausea subsided under the influence of small doses of calomel frequently repeated, and the man slept fairly well during the night. On the following day it was determined to feed him, as he had up to this time taken very little food, and he seemed to be fast losing ground; he was accordingly given a sufficient quantity of milk both morning and evening by means of the nasal catheter. During the afternoon he was noisy, but slept fairly well during the night.

On May 1st the man had slight fever in the morning. The tongue was dry. The patient was very quiet all day, and seemed on the whole slightly better. He took milk voluntarily, and manifested no gastric disturbance. His bowels were moved during the day. Nothing further of interest occurred till about 3 o'clock on the following morning, when the night-nurse sent me a report that the patient had suddenly become worse, and was apparently dying. Death occurred about twenty minutes afterward.

The following is abstracted from the autopsy records: The autopsy was made eight hours after death. The pia mater was engorged with blood, but not adherent to the brain-surface. The brain-mass, as a whole, was of greatly diminished consistence, and on section showed marked congestion, although very little blood exuded from the puncta vasculosa, which were very numerous. The softening seemed general, but was most marked in the frontal and parietal segments of the brain.

On laying open the circle of Willis three thrombi were found, one in the basilar artery, successfully occluding its caliber; this thrombus was formed apparently from a thrombotic shred which had been thrown into several folds by the blood-stream, and had received some recent additions in the way of dark clotted blood. The two thrombi in the middle cerebrals were much smaller, the one on the right side being the larger of the two, but neither successfully occluded the caliber of the vessel.

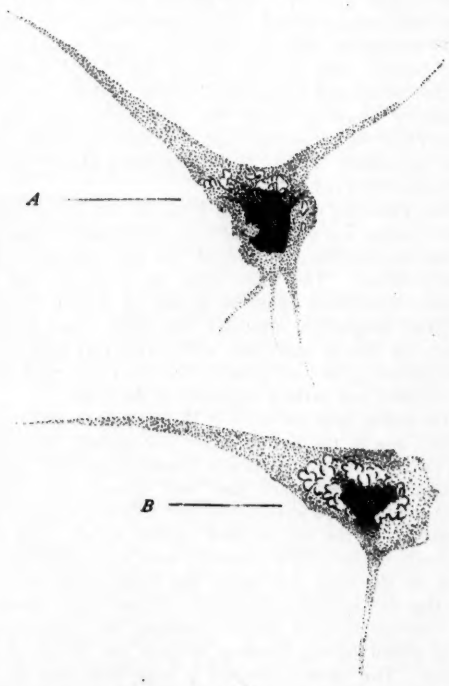
The longitudinal sinus contained an ante-mortem clot, which did not, however, occlude the caliber of the sinus. The heart contained a large thrombus in the right auricle, firmly attached to the tricuspid valve, and occupying about one-third of the space in the auricle; a smaller thrombus in the right ventricle, extending up through the pulmonary orifice; a similar clot in the left ventricle, extending up through the aortic orifice; and also one in the left auricle, firmly attached to the mitral valve. The stomach presented three ulcers, one along the lesser curvature, of very recent origin, midway be-

tween the pyloric and cardiac orifices, and two smaller ones near the pyloric orifice, each about the size of a dime. These were apparently the older.

This case is interesting from a pathologic standpoint, on account of the unusual lesions found to account for the symptoms and the patient's unlooked-for death. Considering the man's age and his previous healthy condition, it seems not improbable that his sudden manifestations of violence were coincident with the occurrence of partial thrombosis of the basilar artery, the mania being due to the serious disturbance in the cerebral circulation, and consequent impairment of nutrition in the ganglion-cells of the cortex. The circulation was still more seriously impaired when the thrombotic shreds in the middle cerebral vessels became thrown into folds and seriously narrowed the lumen of the vessels, and death was to have been expected as soon as the cerebral blood-supply became sufficiently limited by the gradually increasing obstruction to the vascular stream.

The microscopic appearances of the cortex were of interest, because they were unlike the conditions found in three cases of acute delirious mania examined previously, and all of which presented the same lesion.

FIG. 1.



A. Vacuolation of protoplasm of cell; nucleus hazy in outline (upper portion). *B*. Marked vacuolation of protoplasm of cell; nucleus small and hazy in outline. (Zeiss $\frac{1}{12}$ imm. obj., Abbe camera lucida.)

The protoplasm of the cell in the neighborhood of the nucleus was almost invariably vacuolated, the degree of vacuolation varying from two or three small, rounded, light areas to large clumps of these (Fig. 1), which in many instances seriously invaded the nucleus, and in a few almost entirely replaced it. (Figs. 2 and 3.) The changes in the nucleus were quite extensive,

FIG. 2.

Vacuolation of protoplasm of cell and nucleus. (Zeiss $\frac{1}{12}$ imm. obj., Abbe camera lucida.)

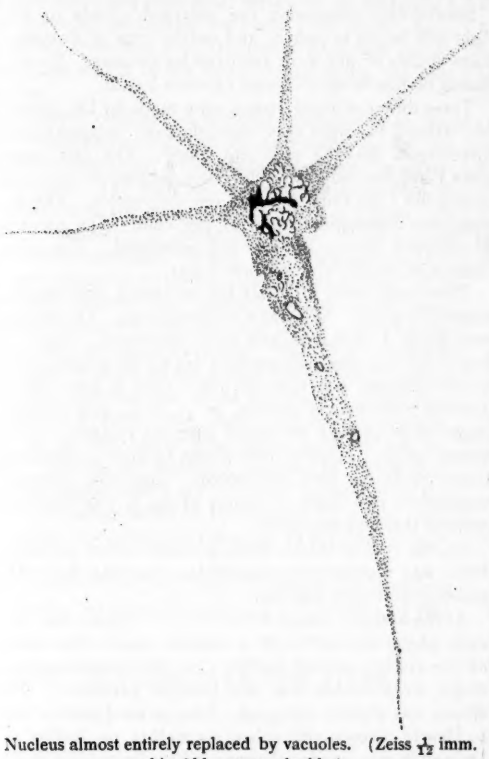
but not general; when present they were quite well marked. In very many instances the nucleus was apparently swollen; in these cases it was always very irregular in outline, but the edges were sharply defined. (Fig. 4.) In other instances portions of the circumference of the nucleus were sharply defined, while other portions were very hazy, shading off gradually into the protoplasm of the cell (Fig. 1, B). In many other instances the nucleus was seriously encroached upon by the morbid process in the protoplasm (Fig. 2); in a few instances being occupied by one or two vacuoles, while in a few others it seemed almost entirely destroyed (Fig. 3).

The microscopic appearances are of especial interest when considered in connection with three other cases of acute delirium that have come to autopsy in this institution in the past year and a half, because of the entirely different nature of the predominating microscopic lesion. In these latter cases pigmentary degeneration of the ganglion-cells was the most prominent feature, being widely distributed and extremely well marked. In the case under consideration there was not the slightest trace of pigmentary degeneration anywhere in the cortex; in fact, the normal deposit of pigment seemed absent from most of the cells.

In considering the apparent variability in the pathologic phenomena presented by these cases, I must con-

fess that the cause for such variability is not entirely apparent; nevertheless we have to consider the fact

FIG. 3.



Nucleus almost entirely replaced by vacuoles. (Zeiss $\frac{1}{12}$ imm. obj., Abbe camera lucida.)

that while the case was undoubtedly one of acute delirium, the nature of the delirium differed somewhat

FIG. 4.

Enlarged and irregular nuclei. (Zeiss $\frac{1}{12}$ imm. obj., Abbe camera lucida.)

from that of cases ordinarily seen, in that it showed a marked disposition to be transient. We must also bear in mind the lesions existing in the vessels at the base of the brain as having a modifying influence on both symptoms and pathology, no such factor figuring in any of the previous cases.

In connection with this case the work of Dr. H. C. Hodge, of the Clark University, is of exceeding interest. In his study of the changes in nerve-cells after functional activity he demonstrated vacuolation of considerable extent as occurring in the nerve-cell after normal fatigue, together with considerable shrinking of the nucleus. In this case there can be little doubt of the existence of extreme fatigue, as the patient was inclined to violence, and often made night and day hideous to those with whom he was associated. Bearing this in mind, the question of the pathologic significance of the phenomena under consideration is an interesting one.

Are vacuoles in nerve-cells of any pathologic import, or is their presence simply an indication of the expenditure of nervous energy? As a partial answer to this question we should bear in mind the occurrence of the most extreme degrees of vacuolation of nucleus and cell-body in primary and terminal dementia, forms of insanity uncharacterized by mental or physical activity of any description. The same might be said to a lesser degree of the different forms of melancholia. On the other hand, the occurrence of vacuolation in epileptic and some other forms of insanity is well known, and according to Hodge it occurs also as a direct result of physiologic fatigue.

In mental disease the nucleus is most often the seat of the morbid process, while in physiologic fatigue the protoplasm of the cell-body is chiefly affected. The forms of vacuolation also differ widely. In the conditions studied by Hodge the vacuoles seemed evenly distributed through the nerve-cell, while in the case under consideration the vacuoles were grouped together in masses, in the neighborhood of the nucleus, and in some instances involved the nucleus also. It would seem, therefore, that we may consider cellular vacuolation, aside from any physiologic process, as a pathologic factor in insanity of some importance.

In conclusion, the proposition may be made that interference with the cerebral circulation may give rise to maniacal outbursts as a direct result of nutritional disturbances in the ganglion-cells of the cortex. Nutritional disturbance is manifested, first, in the brain, by the marked diminution in the consistence of the cerebral mass, and, second, in the ganglion-cells, by vacuolation of the protoplasm of the cell-body, and in fewer instances of the nucleus also.

A CASE OF GENERAL TUBERCULOUS LYMPHADENITIS WITHOUT INVOLVEMENT OF OTHER ORGANS.

BY D. J. MILTON MILLER, M.D.,
VISITING PHYSICIAN TO THE EPISCOPAL HOSPITAL, PHILADELPHIA.

W. M., a teamster, twenty-two years old, was admitted to the Episcopal Hospital, February 5, 1894. There was no family history worthy of note, nor had the man any previous illness beyond an attack of measles in childhood. His present illness began three months before, when he first noted swelling of the cervical glands (he insisted that they were not swollen before that time).

Four weeks before admission he was attacked with pain in the back and limbs, accompanied by great weakness. He had spells in which he would "tremble all over" and feel chilly, but there were no actual chills. He perspired profusely and continuously, by day as well as by night; but he did not think he had fever, nor had he any cough.

On admission he was noted to be a very thin man, who had evidently lost flesh recently (five pounds in the preceding few weeks, he said). The cheeks were flushed; but the surface was cool to the touch, and the thermometer registered 95° F. in the mouth; the pulse was 120; the respirations 18. The whole surface was bathed with perspiration, which, on the forehead, stood out in large drops. The epidermis of the palmar and plantar surfaces was sodden and macerated, and the skin of the trunk (chest and back) was covered with a profuse vesico-papular eruption. The lymph-glands of the neck were very much enlarged. This condition was particularly marked on the left side, where the glands formed large masses, two of them the size of a hen's egg, under the inferior maxilla and anterior to the sterno-mastoid muscle. The same description applies to the right side, though the masses were smaller, not larger than a walnut. The posterior cervical, the axillary, and the inguinal glands were also slightly enlarged.

The tongue was coated; anorexia existed; the bowels were regular; there was much pain in the abdomen about the umbilicus; the area of hepatic dulness was not increased; the spleen was slightly enlarged; the thoracic organs were apparently healthy. There was a peculiar tremor of the muscles, very much like a fibrillary contraction; this persisted throughout the course of the case. The only symptoms the patient complained of were profound weakness and the constant sweating.

The further history of the case was one of progressive asthenia. Two remarkable features characterized the case throughout: profuse and constant sweating and a persistently low temperature. There were but few occasions during the seven weeks' residence in the hospital on which the whole surface was not bedewed with perspiration, and it is notable that, on the few occasions on which this was absent, the temperature rose to the normal or above. The sweat not only saturated the body and bed linen, but it induced an extensive eczema, which, as the case progressed, became pustular, so that during the last two weeks of life large crops of painful furuncles appeared, and, in addition, the epidermis over the hands and feet separated in large, sodden masses; while on the trunk a widespread desquamation took place. As a result (probably of this constant surface-evaporation) the temperature, except for a period of nine days, remained persistently and almost constantly below normal. During the first eleven days it only reached 98.5° twice. For the next nine days it fluctuated between 97° and 99°, only reaching the latter point four times. During the following twenty days it varied considerably, but it was almost always subnormal; its average range being from 96° to 97°, and only reaching or exceeding 98.5° fourteen times; on one occasion, when atropin (gr. $\frac{1}{100}$ t. d.) had been ordered the day previously, it rose to 102.2°. As the end approached, during the last nine days of life, the temperature ranged between 94° and 96°, and was below 95° eleven times; on four occasions falling to 94°. The thermometric observations were made every four hours. From time to time there was delirium, mostly of a mild character.

Shortly after admission the enlarged glands on the right side began to soften, and on the 27th of February a few drams of pus were removed by incision. Examination of this failed to reveal tubercle-bacilli.

Three different blood-counts were made by Dr. Joseph McFarland, but were very unsatisfactory, because of the difficulty in drawing sufficient blood. The first count gave 1,024,000 red corpuscles; the second, 875,000 red corpuscles; the third, 890,000 red corpuscles. The hemoglobin was estimated at 65 per cent. The number of colorless corpuscles was not estimated. The urine contained neither albumin nor sugar.

There was never any diarrhea or cough, and the examination of the chest was always negative. The patient was given a stimulant and tonic treatment. Syrup of hydriodic acid was administered during the whole course of the disease, but with no other than a tonic effect. For the night-sweats, atropin, gr. $\frac{1}{200}$ t. d., and in larger doses of gr. $\frac{1}{60}$, was the most effectual remedy. Camphoric acid, in doses of from fifteen to thirty grains once daily, made but little impression. Following Ringer's suggestion, pilocarpin, in doses of gr. $\frac{1}{30}$ was tried, but without the slightest result.

On the 25th of March death occurred rather suddenly, but it was momentarily expected, as the man had been growing gradually weaker.

At the autopsy (made by Dr. C. H. Frazier, the resident physician), although a careful search was made, all the viscera seemed healthy; for this reason a microscopic examination was not thought necessary. The spleen was slightly enlarged. The cervical glands were so clearly caseous and tuberculous that no further examination was made of them. The bronchial glands were enlarged, caseous and tuberculous. The mesenteric glands were also abnormal; they were enlarged, and on section showed tubercles and caseous deposits. The same, except that there was no evident tuberculosis and caseation present, may be said of the inguinal glands.

Dr. Joseph McFarland, pathologist to the hospital, to whom some of the glands were sent for examination, has given me the following report: "The bronchial gland is so obviously tuberculous, caseous, and calcareous that a microscopic examination was unnecessary. Its appearance leads me to believe that its lesion is one of long standing. Calcification of tuberculous deposits usually indicates chronicity, so that it is natural to infer that the disease of the bronchial glands in this case was one of the oldest lesions if not the primary one. The inguinal gland is also tuberculous, but presents a miliary tuberculosis of mild grade. The naked eye detects nothing, and the microscope alone reveals the presence of small, partly broken-down tubercles. I think the invasion a recent one, for the reason that the tubercles are few, and that each represents a rather rapid destructive coagulation-necrosis, which causes a granular caseation without giant-cell formation. Careful search was made for the tubercle-bacillus, but it was not found. This was probably due to the poor preservation of the specimens (they were kept for some time in weak alcohol), and not to the absence of the organisms. From

the microscopic appearance I have no hesitation in pronouncing the case one of tuberculosis."

General tuberculosis of the lymph-glands, without involvement of the other organ, is a very rare condition. In a very hasty and superficial review of the literature I have succeeded in finding no cases. Dr. Osler, however, in his *Principles and Practice of Medicine*, speaks of two cases which, in the main, resemble the one here described.

The almost constant subnormal temperature in this case is remarkable, but can be accounted for by the ever-present sweating, which kept the patient in a continuous bath. The skin was always extremely cold to the touch, and the patient was ever in a tremor. It would be interesting to know the cause of the almost uninterrupted sweating. It has been suggested that it was due to pressure on the cervical sympathetics, but it is difficult to believe that pressure existed to the same degree on both sides, and even if it did, it would hardly have caused universal sweating. The most plausible explanation, it seems to me, is that it was brought about by the same agencies that cause sweating in pulmonary tuberculosis, pyemia, and septic processes generally. But as we do not know what those agencies are, or, granting that we do, the exact manner in which they act, and as physiologists are not even agreed as to the causation of perspiration in the healthy, it would seem but a useless speculation to attempt to account for it in this case.

Thanks are due to Dr. Chas. H. Frazier, the resident physician in charge of the ward, for the notes of this case.

INDIGO CALCULUS FROM THE KIDNEY.[1]

BY W. S. FORBES, M.D.,
OF PHILADELPHIA;
PROFESSOR OF ANATOMY IN JEFFERSON MEDICAL COLLEGE, AND CLINICAL SURGEON TO JEFFERSON MEDICAL COLLEGE HOSPITAL.

THIS specimen was found, *post mortem*, in the pelvis of the left kidney of a man who committed suicide in February, 1892, by turning the gas on in his room. The man was twenty-seven years old, about five feet nine inches in height, and weighed 150 pounds.

The examination revealed rigor mortis to be well marked. The peritoneum, the pleura, and the pericardium were normal. The heart was slightly hypertrophied, but its valves were normal. Both lungs were intensely congested and black in color, and did not turn red on exposure to air. They were not edematous. The peribronchial glands were intensely calcareous, and slightly larger than normal. The spleen was normal. The bladder was normal and was partially distended with urine, which on examination was found free from albumin, sugar, casts, pus, and blood. This case well illustrates the tolerance sometimes displayed by the kidney to the presence of even large calculi, for upon inquiry of the family of the subject from which the specimen was obtained, no history of pain or other symptom suggestive of the presence of the foreign body could be obtained. The right kidney was slightly movable in the perinephric fat, but was otherwise normal. The left kidney was surrounded by a thick fibrous mass, involving the entire perinephric fat. This inflammatory deposit also involved the blood-vessels passing to and from the kidney. The renal vein was much constricted in passing through the inflammatory mass. The ureter was bound by fibrous bands that slightly compressed it. An incision into the kidney revealed a calculus occupying the pelvis and one calix.

Professor W. M. L. Coplin, of Jefferson Medical College, made the post-mortem examination and handed me the kidney, with the calculus *in situ*. The specimen, of which an actual representation is here given, weighs 147 grains; its greatest thickness, fore and aft, is $\frac{19}{32}$ of an inch. It measures from A to B 1⅛ inch, and from C to D 1½ inch.

The dark-brown color caused me to think that it was formed of indigo, and drawing it across white paper it left a rough, blue mark, so that I was further impressed that it was perhaps indigo.

Ord, in his most excellent little work on the *Influence of Colloids upon Crystalline Form and Cohesion in Urinary and Other Calculi*, London, 1879, p. 144, has described at length what he believed to be the only specimen of indigo calculus in man that had hitherto been published. His specimen was a flat, hard cake, of the shape and size of a fruit-lozenge, and weighed forty grains; it was partly of a dark-brown color, three-fourths of its surface presenting a blue-black color; it was granular and without polish, and when drawn across white paper left a rough, blue mark.

The stone herewith presented reminded me so forcibly of Ord's indigo calculus that I determined to have it subjected to the same accurate test to which he subjected his specimen. The result was almost identical with Ord's. The dust of the stone was placed on platinum foil, and on applying heat the vapor emitted was collected on a glass slide, a drop of glycerin was added, and on comparing the specimen thus obtained with a preparation made in the same way with commercial indigo the appearances were identical. In both cases there were abundant blue prisms mixed with blue granules. The prisms were oblong, with pointed ends, and occasionally truncated.

The color-test was exactly the same in both specimens (Ord's and my own). Sulphuric acid dissolved the powder first into a brownish and then into a muddy-blue solution, which, after dilution with water and filtration, yielded a clear, blue fluid. This fluid gave in the spec-

[1] Read by title before the American Surgical Association at Washington, May 30, 1894.

troscope a marked band of yellow, without stopping the blue or red rays. The sooty odor on the application of heat was most decided.[1] The specimen may be seen in the Museum of Jefferson Medical College.

1704 WALNUT STREET.

A CASE OF ACCIDENTAL HEMORRHAGE.

BY EDWARD T. ABRAMS, M.D.,
OF DOLLAR BAY, MICH.

THE following case is reported with the hope that it may prove of interest to general practitioners that have not the advantage of being able to call in a specialist, but who must act upon their own responsibility and with their own knowledge.

In February last I was called to deliver Mrs. T., thirty-four years old, a quintipara. The previous labors had been normal throughout, and on my arrival in this particular one, things were progressing nicely. The pulse was strong, regular, and about 78. Labor-pains were strong and regular.

As it looked as if some time would elapse before labor would be completed, I lay down in the same room.

After a time I was startled to hear the woman say that she was feeling faint. I sprang to her side and found her pulseless and in a state of collapse. The pains had entirely ceased; the uterus seemed enormously distended and boggy. The face was pinched and pale—in fact the woman presented a typical picture of post-partum hemorrhage. A hasty vaginal examination showed the os to be fully dilated and the membranes intact, but negative as far as hemorrhage was concerned. I gave the woman a hypodermatic injection of whiskey and ergotin, and shortly had the satisfaction of feeling the pulse again at the wrist, though exceedingly rapid, weak, and irregular.

After waiting for some little time, with the hope that she would rally, and the condition of things not materially changing, I ruptured the membranes, applied the forceps, and delivered a fine male child; then a gush of blood followed, together with clots sufficient to fill a good-sized basin. By gently kneading the uterus it contracted well and gave no further trouble. Both mother and child were saved in this case, I believe, by the prompt stimulation and the complete, immediate emptying of the uterus.

WIDESPREAD PARALYSIS FOLLOWING DIPHTHERIA.

BY E. W. PRESSLY, M.D.,
OF CLOVER, S. C.

CARRIE B., aged eight years, was attacked by diphtheria during the first week of February. The attack was rather more severe than the average during the epidemic. The drum of the left ear was perforated, and at times fluids after being swallowed would escape through the ear. During the early portion of the convalescence paralysis of the muscles of the soft palate made its appearance, and fluids regurgitated through the nose on swallowing.

The paralysis next invaded the ocular muscles, giving rise to strabismus. The sphincter muscles of the iris became paralyzed, and the pupils enormously dilated. Diplopia was also complained of. In a short time the paralysis had involved both arms and legs, and the little girl was unable to turn in bed. The knee-jerks were entirely absent, and the surface of the skin not normally sensitive to touch.

Gradually, under treatment, the paralysis disappeared, and now there only remains a slight difficulty in the articulation of certain sounds.

The treatment consisted, during the attack of diphtheria, in the use of large amounts of tincture of ferric chlorid and whiskey, together with the use of antiseptic applications to the throat.

For the paralytic trouble I used strychnin, general friction of the entire body, bathing, and rolling in the open air in a child's carriage.

NEW DEVICE.

ILLUMINATION AND EXAMINATION OF THE ANTERIOR AND POSTERIOR NASAL CAVITIES.

BY D. BRADEN KYLE, M.D.,
OF PHILADELPHIA;
LARYNGOLOGIST TO ST. AGNES' HOSPITAL, INSTRUCTOR IN CLINICAL MICROSCOPY, AND ASSISTANT DEMONSTRATOR OF PATHOLOGY IN JEFFERSON MEDICAL COLLEGE.

THE method usually resorted to in the examination of the nasal cavities consists in the use of reflected light, which is projected into the cavity, as in the anterior cavities; or by means of reflected light and the rhinoscope, a view of the structures of the cavity is obtained, as in the post-nasal space. In order to obtain a clear definition of a body, the light should be at a point beyond the object to be examined and the position occupied by the observer. This is especially true of the various cavities. If a light then be placed within the post-nasal space a good view can be obtained through the anterior cavities, not only of the structures therein contained, but also largely of the naso-pharynx. With this end in view I have employed the following device, of which, so far as I am aware, the idea is original, at least in its application to nasal examinations and in the controlling of the heat by means of the aluminum cap. I am indebted to Mr. W. L. Turner, of Charles Lentz & Sons, for valuable assistance in the construction and perfection of this apparatus. A little incandescent light of four-voltage power is placed on the end of two light, insulated copper wires constructed the same as a cautery-wire. (See figure.) An objection was found in the inconvenience caused by the heat produced by the current and reflected from the lamp. To obviate this it was found, after testing many materials, that an aluminum-

[1] I am indebted to Prof. J. W. Holland, Professor of Chemistry in Jefferson Medical College, for the foregoing analysis.

cap could be used continuously for at least half a minute without any inconvenience; but by interrupting the current it can be used as long as desired. This cap has an opening to allow the escape of the rays of light, and also acts as reflector. The cap is so arranged that the aperture can be turned in any direction desired, so as to enable the observer to directly illuminate any part to be examined. The light is placed in position with the same movement as is used in introducing the rhinoscope, and when directly behind the arches the patient closes the mouth, holding the instrument firmly between the teeth. I have passed the instrument in a number of cases in which the fauces were extremely sensitive, and I find that if it is passed in the manner described no difficulty in retaining the instrument is experienced. The observer, then, with the aid of the nasal speculum, can obtain a perfect view of the parts. The light can be turned on and off at will. This method will also, after a little practice, largely enable the observer to determine the condition of the accessory cavities and parts, especially the antrum of Highmore. The connecting wire will fit any of the many handles now furnished with the equally many batteries. The battery used with this light is the Edco storage-battery of sufficient power to light a six-volt lamp. The whole outfit weighs less than twenty pounds.

1632 CHESTNUT STREET.

MEDICAL PROGRESS.

Hydatid of the Brain.—HAWKES (*Australian Medical Journal*, vol. xvi, No. 4, p. 199) has reported the case of a boy, six and a half years old, who a week before coming under observation had a convulsion, in which the body became stiff and the face pale, but without cry or biting of the tongue. On inquiry it was learned that the child had had attacks of vomiting at intervals of one or two weeks during the previous four months; his mental condition had become dull; he was less inclined to play than formerly, preferring to lie down and sleep during the day. He had for two weeks complained of pain in the right frontal region, and during this time the right eyelid had been observed to droop and the gait to be a little unsteady. The child had gained flesh. The water-supply of the family was taken from a creek. The boy was well nourished and without external evidence of disease. Vision with the right eye was impaired and the pupil was dilated and fixed. The left eye, which turned inward, was normal. On ophthalmoscopic examination the retina of the left eye was seen to be of a bright-pink color, that of the right bright-red; the vessels were plainly seen. There was no tenderness on percussion of any part of the skull, but the child frequently put his hand to the right side of the forehead. There was general paresis of the muscles of the extremities, the grasp being weakened equally on both sides. A diagnosis of tumor of the brain was made, but an opinion as to the location was not ventured. The condition of the child underwent little change for two weeks, when he became unconscious; the temperature rose to 102.5°; there was complete flaccidity of the extremities, and there was no response to the hardest pinch; both pupils were widely dilated, and the corneal reflex could not be elicited. This condition continued for thirty hours, when the child showed signs of returning consciousness. Improvement gradually took place, and in the course of two weeks the boy was able to answer questions and recognize voices. At this time there was complete amaurosis and both pupils were dilated, particularly the right; ptosis of the right lid was not so marked as it had been; the sense of smell was completely lost; taste was impaired. The child was unable to stand without support; when in the erect position his head inclined forward and toward the right shoulder, and the whole body had a tendency to fall toward the right side. Sensation was not deranged. The pupils were widely dilated when the child was awake, but contracted when he was asleep. Two days later there was slight paralysis of the right side of the face, only noticeable at times; the tip of the tongue deviated to the right and there was some difficulty in swallowing. The probability of the existence of an hydatid growth implicating the motor area in the right cerebral hemisphere, as well as the right hemisphere of the cerebellum, led to the consideration of operative interference, but upon consultation this was deferred. The child died on the day fixed for trephining the cranium over the ascending parietal convolution at the junction of its middle and inferior thirds. Upon post-mortem examination a large hydatid cyst was found in the right cerebral hemisphere, extending from the cuneate lobe to the fissure of Rolando; the bones of the skull were thinned; the dura mater was congested, and there was a large blood-clot in the torcular Herophili, extending into the lateral sinus. The cyst presented in the longitudinal fissure through an opening about the size of a five-dollar gold piece.

Congenital Hydrocele of the Neck Cured by Drainage and Compression.—DICKINSON (*British Medical Journal*, No. 1741, p. 1018) has reported the case of a healthy, intelligent-looking male child, three years old, that from birth presented a swelling in the lower part of the neck, in a vertical line with the left ear. The growth had gradually and progressively increased in size, and, following a slight blow, had become inflamed and threatened to suppurate; the inflammation, however, yielded to hot applications. The mass appeared as a soft, white, fluctuating swelling, translucent and pearly, owing to the thinness of its walls over the posterior half, having no discernible veins running over it, and becoming alternately tense and soft during crying and coughing. It extended from the sternal extremity of the left clavicle in front to the middle line behind, and quite filled up the sulcus between the neck and the shoulder, looking like a swimming-collar and overhanging the clavicle in front. A trocar and canula were passed into the cyst at its posterior and thinner part, and about eight ounces of dark greenish-brown, highly albuminous fluid, resembling bile-stained urine, escaped, with little or no force, the child breathing tranquilly at the time. A small incision, sufficient to allow of the introduction of the little finger, was made in the position of the puncture, and through this the cavity was explored. The sterno-mastoid muscle in the front wall of the cyst felt thin and atrophied; the carotid artery, lying by the trachea, and the subclavian, passing over the left lung, felt quite hard and clear, apparently having no covering and lying free in the cyst. No constriction or obstacle prevented the

finger from following the arteries downward behind the sternum to the arch of the aorta, which was felt pulsating vigorously, and as far as could be discerned was quite bare. The child at this stage showed signs of shock, turning pale and the respiration ceasing. After two efforts at artificial respiration, natural breathing was resumed. No further attempt at exploration was made, but a second small incision was made in the cyst-wall about two inches in front of the first and one inch behind the posterior border of the sterno-mastoid muscle. A piece of thin drainage-tube, passed in at one opening and out at the other, was found to be too rigid, crumpling up the intervening wall. A seton, consisting of five or six strands of fishing-gut, was therefore introduced and the ends tied together. A good pad of absorbent gauze was bandaged firmly over the site of the collapsed cyst. The wound was dressed on alternate days for thirteen days. At the earlier dressings a considerable quantity of blood-stained serum escaped and soaked the dressings, but the openings drained well, and not more than three-fourths of an ounce was ever found pent up. At the later dressings the character of the discharge became altered to a muco-purulent fluid and the temperature began to rise, the general health at the same time suffering somewhat. The seton cut its way out, and the wound continued to discharge more or less freely until five weeks after the operation, when it had healed and there was no appearance of any swelling or recurrence. The child rapidly regained its health.

THERAPEUTIC NOTES.

Potassium Iodid for Prostatic Hypertrophy.—DAVY (*British Medical Journal*, No. 1750, p. 68) reports a troublesome case of hypertrophy of the prostate, in which catheterization was almost impossible, and the patient's sufferings were so great as to require morphin for their relief. When a catheter could not be passed at all, the involuntary straining efforts to pass a few drops of urine were most distressing, the patient being bathed in perspiration and groaning with agony. For the relief of this condition potassium iodid was prescribed in the form of suppositories, each containing ten grains, one to be introduced into the rectum every night. In the course of some time the prostate became somewhat diminished in size, with corresponding relief from the distressing symptoms. Although a catheter could not entirely be dispensed with, the man was for the most part able to pass a fairly good stream of urine. It is recommended that the line of treatment pursued in this case be at least given a trial in similar cases before proceeding to measures of graver moment.

The Danger from Antipyrin, Antifebrin, and Phenacetin.—As the result of an inquiry conducted during the past year as to the frequency and importance of the ill-effects following the use of the three chief antipyretic agents, phenazone (antipyrin), acetanilid (antifebrin), and phenacetin, the Therapeutic Committee of the British Medical Association has found that the statements concerning these effects have been considerably exaggerated, most of all so in the case of antipyrin and phenacetin. The ill-effects observed, when not obviously due to idiosyncrasy, have in the majority of cases been the direct result of injudicious or excessive dosage. This has especially been the case with antifebrin, with which drug the ill-effects have been the most frequent and most serious. The dosage employed by no fewer than three-fourths of observers (from four to ten grains) has been habitually excessive, the proper dose of this drug being from one to four grains.

Ortho-chlorphenol and Para chlorphenol in the Treatment of Tuberculous and Other Affections of the Upper Air-Passages.—SIMANOWSKY (*Therapeutische Monatshefte*, viii Jahrg., H. 7, p. 329) has employed ortho-chlorphenol and para-chlorphenol in the treatment of tuberculous processes of the upper air-passages and in hyperplastic conditions and chronic swellings of the mucous membrane, using 5 per cent., 10 per cent., and 20 per cent. solutions in glycerin, or pure melted para-chlorphenol. The affected areas are either painted by means of a brush or a cotton swab, or the solution is injected by means of a laryngeal syringe. The application is for a short time followed by burning and pain, so that in the case of sensitive individuals the treatment may well be preceded by an application of a 10 per cent. solution of cocain hydrochlorate.

Chloral Hydrate for Hemoptysis.—Having in view the reduction of the pressure in the pulmonary circulation, PAL (*Centralbl. für die gesammte Therapie*, 1894, H. 7, p. 385) employed chloral hydrate in doses of from 15 to 37.5 grains by enema in the treatment of the hemoptysis of pulmonary tuberculosis, selecting young adults with healthy hearts. In some cases the hemorrhage would cease or diminish in from half to three-quarters of an hour, sometimes recurring after a varying interval. In a number of instances the administration of the drug was repeated, sometimes in a prophylactic way even after the hemorrhage had ceased. Morphin and codein may be expected to act with correspondingly good results, and morphin has the additional advantage of subduing cough.

The Use of Spartein as an Adjunct to Chloroform-anesthesia.—At a recent meeting of the Paris Society of Biology, LANGLOIS and MAURANGE (*Gazette Médicale de Paris*, 1894, No. 28, p. 331) stated that, governed by the influence of spartein in regulating the action of the heart and diminishing the excitability of the pneumogastric nerve, they were led to employ this drug to avoid the cardiac depression that sometimes manifests itself in the course of chloroform-inhalation. Their experience included, in addition to experiments upon animals, 120 observations upon man, sometimes in the presence of cardiac disease, sometimes when the operation was protracted. Their mode of procedure consisted in the injection of from gr. ss to gr. $\frac{3}{4}$ of spartein together with gr. $\frac{1}{8}$ of morphin fifteen minutes before beginning the chloroform-inhalation.

For Broncho-Pneumonia, SUTLIFF (*Occidental Medical Times*, vol. viii, No. 7, p. 398) recommends the administration of tincture of veratrum viride in small, frequently-repeated doses. Young nursing infants may have a fraction of a minim, and older children more, every two or three hours. Under this plan of treatment the pulse-frequency is reduced, the respiratory acceleration diminished, and the whole aspect of the case changed for the better.

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SATURDAY, AUGUST 18, 1894.

THE CHILDREN OF THE STATE IN ENGLAND.

THE *British Medical Journal* has lately presented a series of articles setting forth the condition of the orphan-asylums and schools for destitute children in Great Britain. As a result of this exposition the public conscience has been so quickened that a deputation of two hundred prominent persons recently waited on the President of the Local Government Board, asking that an inquiry be instituted as to a better method of caring for the children of the State. A full report of this conference appears in the *British Medical Journal* for July 28, 1894, p. 211.

In looking over this the American physician is surprised to find that the orphan-asylums and "barrack-schools," as they are called, supported by the Local Government Board are practically prisons in which the children are kept from the world and from which the inquiring public is entirely excluded. It appears that the President of the Local Government Board confessed himself powerless to open the doors of these bastiles even in a single instance. This state of affairs is only approached by the condition of some of our city prisons.

Under these circumstances it is evident that all sorts of abuses are encouraged. The persistent criticism of scientific sociologists, the clamor of the laboring-classes and their powerful journals, the multiplied inspection and over-inspection by boards have driven out many of the scandalous abuses of twenty years ago; but there remain the inherent faults of the institutional system.

The destitute children of England are collected together in great barracks, from 200 to 1400 in each. They are fed, washed, and slept by machinery, at an almost incredibly small expense, but they grow into a physical maturity without a knowledge of the most ordinary conventions of life. They have never been in a home, and therefore they do not know what a home is, and they make mistakes that would be laughable were they not so significant. They are unfamiliar with the requirements of family, neighborhood, and business life. Of human affection, of kindness, of charity, of devotion, of hope, of ambition, of self-denial, and of brotherly love they know nothing. They have no moral or social development and training to prepare them for life in the world, and when they go out for themselves they are prepared for no career, and no avenues are open to them except those of crime and vice.

But even this is not the only indictment of the institutional system. Every child should be sent out sound and healthy, but these children are sent out with defective eyes and ears, with all sorts of skin-diseases, with imperfect and impaired, and even diseased, respiratory apparatus, and, again, with all those diseases and defects that follow the acute infectious diseases even under the most favorable circumstances. Defective vision, defective hearing, and consequent dull and undeveloped mental faculties, with lack of exercise and diminished vital force, form the heritage of those who survive the recurring epidemics of diarrhea, eruptive diseases, typhoid fever, diphtheria, and ophthalmia.

The death-rate has been and continues to be appalling. The crippled, bow-legged, rachitic, humpbacked, and scrofulous are more than twice as numerous among them as among the lowest independent poor. The average physical development is of the lowest grade.

The Charity Organization Society and the British Medical Association have collected information which the officials of the Local Government Board have not found time to investigate and have refused to publish. These documents have been published elsewhere. Nearly all the teachers and attendants in these institutions must, according to the rules of the Board, be unmarried. What a cruelty to practise on the children of the State, that they must be

cared for by old maids and bachelors, or those who do not have the softening influences and culture of a son or daughter! No wonder that 53 per cent. of the barracks-brought-up girls are reported "bad or unsatisfactory," and that an excessively small percentage of the boys become useful men.

The results of this child-incubation are most unsatisfactory; but, above all, it is expensive. And this point will doubtless appeal to the American mind. It appears that each child is reared at an expense of about $150 a year in the barracks, while in cottages the expense is $125, and by the boarding-out system $65 a year. This statement becomes more exasperating when we learn that almost one-half goes for officers' salaries and only one-fourth for the "maintenance and burial" of the children.

The *London Times* has given the inquiry the support of a powerful editorial, but nowhere does anyone mention the success that has followed the boarding-out plan in Australia. This system was noticed in THE MEDICAL NEWS of November 11, 1893, p. 551.

To us the condition of our own institutions for destitute children is of little interest. The number of such children seems to many comparatively small. In all of our large cities great colonies of gamins subsist and thrive in the streets, under the sidewalks, and in deserted mills and houses. Only those too young to run away can be kept in the eleemosynary institutions that the pious have provided. Detention is possible for those who have tasted liberty and street-life, only when committed by our unthinking courts. Thus, while England is aroused over the perversion of humanity in these barracks and workhouses, and demands a legislative investigation, America, the land without a privileged class, has not the time to discuss the subject at all. In far-away Australia the problem is solved.

It might be denied that the children of the State and their condition and education have received no attention from us. Let a few facts answer.

At a recent visit to Troy, N. Y., a new gothic orphan-asylum was discovered that cost for the building alone 125,000 dollars, and prepared to accommodate 200 children. This is a private institution, doubtless with ordinary wishy-washy charitable motives and with the ordinary inadequate, and, may we say, inhuman results. In the city of New York a Catholic institution was visited in which there were 300 inmates supported from the treasury of the city. In Pittsburg, Pa., attention was called to the fact that a young girl was then in jail for ten days for disorderly conduct on the testimony of a single police-officer, and the same one who had sent in a similar way two sons of this girl's widowed mother to the workhouse for thirty days each. It was impossible to gain any admission to this girl because her sentence was a ten days' bread-and-water punishment. And what for? For going out barefoot on the streets of Pittsburg to look for her brother at eleven o'clock at night.

Scientific, unprejudiced men and women have shown beyond question:

1. That institutional life is dangerous in proportion to the size of the institution and the youth of the inmates.

2. That the children of the street are in the schools for vice and crime.

3. That the commitment of young persons and children to the jails, prisons, and workhouses of our cities is inexpedient, extravagant, inhuman, and in every way irrational.

4. That every orphan-asylum is a public curse.

5. That the most efficient, the most economic, and the most rational method of caring for destitute children is by the boarding-out plan, or Australian system.

No altruist can look with complacency upon our condition as regards the children of the State. This movement in England may, perhaps, arouse our anglo-maniacs to imitation. But only the thoughtful will hasten the time when ours shall be a country without an orphan-asylum and a land without a child in workshop, jail, or reformatory. In this work medical men must be conspicuous for the honor of our profession.

EDITORIAL COMMENTS.

The Presence of Tubercle-bacilli in the Nasal Cavities of Non-tuberculous Persons.—The ubiquity of the tubercle-bacillus is already well recognized. As the dissemination of the organisms takes place most commonly through the mediation of the fine particles into which the indiscriminately-disposed-of expectorated matters or other discharges from tuberculous persons are ground, it is logically to be expected that the bacillus may be found wherever dust can penetrate. Thus it is that tubercle-bacilli have been found in washings from fruit exhibited for sale in open places, as upon the streets, and upon the walls and ceilings and in the dust of houses occupied by tuberculous subjects to the care of whose discharges the most scrupulous attention has not been given. The knowledge of these facts prepares us for the announcement made by STRAUSS (*Münchener medicinische Wochenschrift*, 1894, No. 28, p. 567) at a recent meeting of the

Paris Academy of Medicine, that he has found virulent tubercle-bacilli within the nasal cavities of non-tuberculous persons whose relations necessitated their association with and frequent presence in rooms occupied by tuberculous patients. The individuals thus studied included male and female hospital-attendants, patients that had long resided in the hospital on account of other than tuberculous affections, and finally clinical assistants. Those belonging to the first and last categories were in perfect health and presented not the slightest evidence of tuberculosis. In the cases studied observations were made of the dust, the crusts, and the accumulations of mucus in the nasal cavities, removed by means of cotton tampons mounted on wooden sticks and sterilized. The tampons and their contents were placed in sterilized water, and this fluid was then injected into the peritoneal cavity of guinea-pigs. Twenty-nine animals were thus treated with the secretion from twenty-nine persons. Seven guinea-pigs died in the course of a few days in consequence of septicemia or purulent peritonitis; nineteen of the animals remained perfectly well, and upon post-mortem examination presented no sign of disease; while nine died or were killed in from three to five weeks, and presented pronounced tuberculous lesions. Of the twenty-nine persons that furnished the material for inoculation all presented no evidence of tuberculosis, but had been for a considerable time in or about the hospital-wards. Of the nine whose nasal secretion contained virulent tubercle-bacilli six were attendants, who lived in the hospital, cleaned the wards, made the beds, etc.; one was a patient, free from tuberculosis, who had long been in the hospital; and two were clinical assistants (among seven) who spent only a few hours daily in the wards.

These observations emphasize not only the widespread distribution of the tubercle-bacillus (and of other pathogenic microörganisms as well), but also the risk of association with the tuberculous and the dangers of dust, as from the careless street-cleaning of our large cities and house-sweeping and the beating of carpets in the open air; and finally the importance of breathing through the nose, for as is well-known the nasal passages act as a filter for the air that enters the lungs and stands as a barrier to the entrance of solid particles, animate or inanimate, whose presence might occasion mischief. It would be interesting to determine whether or not tubercle-bacilli are present in the nasal cavities of persons whose relations do not bring them in contact with tuberculous subjects or expose them to distinctly tuberculous surroundings.

"The News" and the American Medical Association.—We are sometimes asked "Why does THE NEWS devote so much space and emphasis to the affairs of the AMERICAN MEDICAL ASSOCIATION and of its *Journal*? Of what benefit to medical science are ethical discussions?"

We devote space and emphasis to the affairs of the AMERICAN MEDICAL ASSOCIATION because we consider it our duty and the duty of every physician in the United States to endeavor to strengthen that Association, improve its organization and increase its usefulness. Organization is necessary to the exercise of function and the accomplishment of ends. The physicians of America, as a body, have certain legitimate functions to perform and ends to accomplish which demand organized, systematic, concentrated effort; and the AMERICAN MEDICAL ASSOCIATION, because of its comprehensive, representative, democratic character, is the best agency through which to bring about the organization of the profession, and by which and in which to do the work and attain the purposes of such an organization. Among these purposes are the bringing together of co-workers in sanitary and medical fields, the consideration of means by which the status of the profession may be elevated, the creation of proper public sentiment upon questions of State medicine, and many others that need not be here repeated, as we have often stated them.

We have devoted some of our space to criticism of the *Journal of the American Medical Association* because we recognize in the *Journal*, properly conducted, a most effective means for carrying out the high purposes of the ASSOCIATION; because we wish to see the *Journal* as good as it can possibly be made; because we conceive that the *Journal* must fail to win the respect of the profession or to exert a good influence, just in that degree that it departs from the highest standard of journalistic and medical conduct.

We believe that ethical discussions are of benefit to medical science, because unethical conduct retards the development of medical science; and hence in exposing and emphasizing the true principles of medical ethics we assist in removing obstacles from the path of science. To permit sham or fraud or unworthy pretence of any kind to go unrebuked is to offer a reward to the two greatest foes of all science and all progress—namely, ignorance and knavery. Therefore, without at all diminishing its labors in matters more directly pertaining to medical science and medical art, THE NEWS trusts to have the continued support of its readers in its continued endeavors to uphold the true interests of THE AMERICAN MEDICAL ASSOCIATION and of *The Journal of the American Medical Association* and in its contest against ignorance and knavery.

We are still patiently awaiting the publication of the full official text of the report of the Judicial Council on the complaint of the MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA. It is a matter of much interest, and there should be no unnecessary delay in acquainting the profession with the action of the Council and its reasons therefor. In this connection we call attention to the clear and judicial editorial which, in another column, we quote from the Journal of the Lehigh Valley Medical Association.

The Influence of the Liver in the Development of Pancreatic Diabetes.—Although we have learned that certain lesions of the central nervous system and destructive changes in the pancreas respectively are attended with glycosuria, the etiology and pathology of diabetes mellitus are yet unexplained. Whatever the chemic and metabolic changes upon which the excretion of sugar in the urine depends, there is evidence that no small part in the morbid process is played by the liver, of whose multiplicity of function we really know comparatively little. There is good reason for believing that under normal conditions the liver either stores up or converts into other bodies a substance allied to sugar, and which, under certain morbid conditions, appears in the urine as

glucose. Additional evidence of this influence of the liver in the development of diabetes is furnished by the results of some experiments detailed at a recent meeting of the Berlin Physiological Society by MARCUSE (*Münchener medicinische Wochenschrift*, 1894, No. 28, p. 564), who undertook to determine if the diabetes that appears after extirpation of the pancreas manifests itself in case the liver is also removed. As the animals experimented with were likely to die sooner in consequence of the two operations than after extirpation of the pancreas alone, the question arose as to whether or not the animals would live long enough to afford time for the development of the diabetes. To decide this point, a series of observations were made upon nineteen frogs. It was found that in the twelve of these in which diabetes developed, this appeared within the first day or two, the animals living on an average for five days. The proportion of sugar contained in the urine, as determined by polarization, equalled 0.4 per cent. In a second series of almost parallel cases, both liver and pancreas were removed, with the result that in not one of the animals did diabetes develop. These animals lived for from one to five days after the operation. The amount of urine excreted was considerable, though not so great as in the case of the animals from which only the pancreas had been removed. In explanation of the influence of the liver in the development of the diabetes that follows removal of the pancreas, it is suggested that there is formed in the liver a substance that, while not itself sugar, is yet of importance in the development of diabetes (perhaps a sugar-forming ferment), or that certain elements in the blood that are acted upon by the liver remain in the circulation after extirpation of this organ, and bring about decomposition of the sugar present after extirpation of the pancreas.

Quack Nurses.—Quackery is contagious and widespread. There are quacks not only in medicine, but the infection seems also to have invaded the profession of nursing. From Detroit comes the announcement of the organization of a "Correspondence School of Health and Hygiene," which proposes to give "instruction by the correspondence method in the care of the sick." The course of instruction, it is believed, "if thoroughly studied by a reasonably intelligent person, will render the pupil as truly a trained nurse as the great majority of those who come from the training schools. . . . No previous training or study is required other than the ability to read and comprehend." As to age, sixteen is not considered too young nor fifty too old. It needs scarcely be said that the art of nursing is not to be acquired by correspondence, from reading, or even from didactic lectures; these measures may aid in the comprehension of the principles upon which intelligent and rational nursing is based, but actual experience by the bedside, in the hospital-ward, and in the sick-room, is absolutely essential.

The Abuse of Dispensaries and Hospitals.—In an effort to correct the prevailing abuse of the privileges accorded by dispensaries and hospitals, the Medical Charities Committee of the British Medical Association has had printed notices for distribution among the institutions of London, with the request of display in a conspicuous place, stating that as these institutions have been "established to relieve only those persons who are too poor to pay for suitable medical and surgical aid, ... patients will be required to give information as to their means and circumstances, with a view to prevent the abuse of this charity by persons who are well able to pay." A canvass of the various institutions reveals the fact that the majority are in favor of the adoption of some such regulation as that proposed, many having already similar measures in operation; others have the matter under consideration, while none has absolutely rejected the propositions made. The example is one that American institutions could follow with advantage and dignity.

Immoral Massage.—The infectiousness and the wide distribution of evil practices is demonstrated by the fact that the revelations made by the *British Medical Journal* in connection with a form of immorality practised under the designation of massage, as noted in THE NEWS of August 4, have already been followed by the apprehension by our Philadelphia police of a number of persons on the ground of having engaged in practices of a similar character. The event also illustrates the important relation borne by the medical profession to the morals of a community.

The Infectiveness of Meat from Tuberculous Animals is a question concerning which there has been a good deal of discussion, without, however, unanimity in the conclusions reached by different observers. As the result of an analysis of the existing literature on the subject, LECLAINCHE (*Revue de la Tuberculose*, 1894, No. 3, p. 133) announces it as his belief that such meat may in certain cases be dangerous; but this is exceptional, and that even when so the danger is but slight.

SELECTION.

THE AMERICAN MEDICAL ASSOCIATION AND ITS JOURNAL.

AT the recent meeting of the American Medical Association, in San Francisco, a resolution was adopted seeking a personal interest of every physician in the country in the Association. This is a consummation devoutly to be wished if the American Medical Association will strive, as an organization, to be governed by the true principles of justice, ethics, and morals, so as to offer, in its associated effort, the true standard for the American medical profession. Any departure from this standard makes it desirable to restrict the influence of the Association in direct ratio to the amount of departure.

Because of this resolution and in a spirit of kindly criticism it is desired to point out a piece of dangerous sophistry in one of the most important documents presented to the Association. As the report was adopted by the Association and becomes its opinion, the power for harm is limited only by the influence the Association is able to exert.

It so happens that this position is taken because of previous criticism on the conduct of the *Journal* of the Association, and it has been asserted that the objections made were not honest in their purpose, but simply a covert attack to prevent the business success of the

Journal, instigated by a rival medical journal. . . . . It is believed that a false position has been taken, and the true and the good can never be attained by sophistry. . . . .

The parts to which exceptions are taken are the *reasons given* for accepting advertisements of a certain kind for the *Journal*. The Trustees say *apropos* of the conduct of the *Journal*: "The policy adopted was, that having entered upon the business of publishing a journal, we would be governed by the same rules followed by those considered reputable who were engaged in the same business." If the American Medical Association is publishing its *Journal* for the *business* there is in it, the sooner it gives up the business and confines itself to its proper sphere, the better for all parties concerned. As well might the Association order the Trustees to operate a factory for the preparation of medicines. If the Association publishes its *Journal* for the benefit of the members in presenting the transactions and other articles of value to its readers, there may be many a "business scheme" judged legitimate on the street that would and should be beneath the tone of the American physician to adopt. Whatever the standard of the other American weeklies may be, they do not, of necessity, afford precedent nor excuse for a journal of the profession, by the profession, for the profession. . . . .

It is not to be inferred that the methods employed by other journals ought not to be studied, nor that they cannot be servilely copied if that is deemed best; the point to be emphasized is that the responsibility for any method adopted in the conduct of the *Journal* cannot be shifted either to the nervous backs of American publishers or the brawny shoulders of our cousins on the other side. The responsibility rests solely upon the Trustees, and the standard by which judgment will be measured is the standard of right, and not of the example of other men. A generalization of this reasoning will permit of any practice however despicable, since "those considered reputable" by the person desiring to do the act can certainly be found.

This article does not propose to discuss the rectitude of admitting the advertisements objected to, as this phase of the question is nowhere suggested in the report.

The second reason advanced savors of a mild flattery, possibly pleasant in inverse ratio to its truth. The readers of the *Journal*, it says in effect, are sufficiently wise as to what will serve their own interests, and no care need be taken by the Trustees as long as they do not permit reading notices. Use the same argument under slightly changed circumstances to get its full meaning. The readers of the religious weeklies comprise the more intelligent portion of the community; they are "capable of discriminating as to what would serve their interests," why should the management exclude the advertisements of "Blowhard's Asthmatic Balsam," "Sneezeham's Catarrh Conqueror," or any of the other numerous remedies of that nature. Business men ordinarily do not advertise merely for sentiment; if they thought that the readers of any journal would in the exercise of their discrimination abstain from purchasing their wares it would be difficult to secure a renewal of the contract from that house.

The third argument may be seen in the following: "Had the apparent intention of those who censure our action been established, we would be obliged to present you to-day a considerable financial deficit." It is fair to infer the possibility of an exclusion of these advertisements were it not for fear of this deficit, and that a sum of money was, after all, the impelling motive for the action of the Trustees and this, their defence. Let us then examine the accounts and try to estimate the price asked for the tacit influence of the *Journal*. According to the report the net receipts were $14,969.67, and a balance of $1885.10. This means that $13,084.67 was needed to supplement the appropriation from the general treasury. The Treasurer's report shows an increased balance over the previous year of $462.85, which makes the actual sum needed but $12,621.72. This is the *maximum* price at which the *Journal* is held; but most of the advertisements are unobjectionable; the threatened deficit is very much smaller than this, and the price is correspondingly reduced.

The outcome of this analysis of the arguments of the Trustees enables the following tabulation of the principles of the conduct of the *Journal*:

I. If journals "considered reputable" are pursuing a certain line of policy, we will follow regardless of ethics or morals.

II. If we believe our readers to be able to discriminate "as to what would serve their interests," it is no concern of ours as to the character of the advertisements received, if we do not "puff" them.

III. If it is necessary to make the *Journal* pay its way, we are willing to sell its pages to accomplish this. Our price for the past year was less than $10,000.00; rather a small price for the *Journal* of the American Medical Association if it should be bought at all.

It is not necessary to moralize upon this; the simple statement of the arguments advanced, cleared from the beclouding rhetoric of the report, permits the lessons to be easily seen.—*Lehigh Valley Medical Magazine*, vol. v, No. 4, p. 214.

REVIEWS.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE, AND TOXICOLOGY. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Hygiene in the University of the City of New York, and TRACY C. BECKER, A.B., LL.B., Counsellor-at-Law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. In four volumes. Vol. I. Large 8vo., pp. 845. Illustrated with woodcuts and two lithographic plates in colors. New York: Wm. Wood & Co.

ON entering upon the publication of an extensive treatise in this field, the publishers have acted wisely in providing legal as well as medical editorship, and in securing the services of numerous collaborators. Such methods, of course, are seen in all fields of science; departments that had just become specialties a score of years ago, are now subdivided into specialties, and when we note this increasing tendency we are reminded of the story of the grammarian who had devoted his life to the study of the Greek definite article, and on his deathbed regretted that he had not limited himself to the dative case of it.

The introduction, comprehending nearly three hundred pages, discusses the legal relations of physicians and a summary of the laws governing the practice of medicine. It is in this latter portion that we can notice a considerable advance. Twenty years ago such a chapter would have been very brief, as there were but few laws on the subject. The information furnished is concisely arranged and makes interesting reading. One of the most valuable chapters is that on the rules and practice of courts concerning communications between physician and patient. It is pointed out in the concluding remarks of the chapter, that the laws making such communications "privileged," that is, not allowed to be disclosed in court, are by no means unalloyed benefits, as the full presentation of facts is often prevented.

The medical part of the volume is largely devoted to the various causes of death other than poisoning; this latter, of course, will be fully considered in a subsequent volume. As another evidence of progress, we note some thirty pages devoted to the effects of electricity, in which lighting and motor currents are fully considered.

Ample space is given to the description of the methods of conducting *post-mortem* examinations and to questions of identity.

Not the least valuable part of the work rests in the fact that it utilizes fully the extended experience of the courts of the United States, and thus presents to the American physician a more vivid picture of medical jurisprudence than can be obtained from works exclusively foreign.

Except in the chapter on wounds, there is little opportunity in the present volume for illustrations, but it contains two excellent colored plates. There is a little confusion in the explanation of Plate II, which shows an *ante-mortem* and two *post-mortem* burns.

The general typography of the work is good, and it may be expected to take a high rank among the manuals of its class.

DIE CAUSALE BEHANDLUNG DER TUBERCULOSE: EXPERIMENTELLE UND KLINISCHE STUDIEN. Von EDWIN KLEBS. Mit eine Photogravure, sieben farben- und neunzehn Kurventafeln, vier Figuren im Text und einen statistischen Beilage. 8vo., pp. 629. Hamburg und Leipzig: Leopold Voss, 1894.

THE active interest that the author has taken, not alone in the study of the pathology of tuberculosis, but, since the introduction of tuberculin, in its therapeutic management, speaks for the value of the book as a contribution to the literature of the subject.

The work is divided into two parts:

Part I deals with the general pathology of tuberculosis, including the history of the disease, the course of the disease, the action of tuberculin upon animals, the histology of healing tuberculous lesions, and the chemical constitution of Koch's tuberculin, with methods of purification and its physiologic activity.

Part II considers the treatment of tuberculosis in man with bacterial products; the bacterio-therapy of tuberculosis, including a comparative study of tuberculosis in man and in animals; the classification of tuberculous processes in man according to their stages of development; the "first, second, third, and fourth" stages of tuberculosis; *tuberculocidin* and its employment in the treatment of tuberculosis; Appendix I, reports of other physicians upon the treatment with *tuberculocidin;* II, supplementary observations, etc.

From the headings cited it is manifest that the book contains much of practical interest. Tuberculocidin, the body obtained by Klebs from cultures of tubercle-bacilli, and used in the treatment of tuberculosis, is, according to him, the active therapeutic agent contained in crude tuberculin. It is obtained from tuberculin by chemical processes, and is claimed to be entirely free from the substances to which may be attributed the undesirable results frequently occurring from the use of ordinary tuberculin.

METHODS OF PATHOLOGICAL HISTOLOGY. By C. VON KAHLDEN, Assistant Professor of Pathology in the University of Freiberg. Translated and edited by H. MORLEY FLETCHER, with an Introduction by G. SIMS WOODHEAD. Pp. 171. London and New York: Macmillan & Co., 1894.

THIS excellent treatise, which first appeared as a supplement to Ziegler's *Allgemeine und specielle Pathologische Anatomie*, will in its translation be welcomed by pathologic histologists of this country and England. With admirable judgment the author has embodied in his book only such methods as are practically useful, and not those long since abandoned. He prefers celloidin to paraffin for purposes of imbedding. It is, however, not necessary, we think, to use two solutions as recommended. A single solution, of medium consistence, will be found sufficient, even for such delicate tissue as the lung.

The author rightly deprecates staining in bulk, a method gradually falling into disuse, as "special color-reactions corresponding to definite tissue-changes," are discovered. The various methods of staining are given concisely, but with sufficient minuteness for practical application in the laboratory. The chapter on the examination of bacteria is an excellent one. We are somewhat surprised, however, to note that under Gabbet's method of staining the tubercle-bacillus, immersion in cold carbol-fuchsin for only two minutes is recommended.

The methods for examining the blood receive proper attention. Preference is given to Toison's fluid for diluting the blood in counting the corpuscles.

A brief chapter on microscopic examination for medico-legal purposes is added, and will be found useful. We can recommend the book, the translation of which is excellent, as one of the best guides in pathologic histology.

DISEASES OF THE SKIN. AN OUTLINE OF THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. By MALCOLM MORRIS, Surgeon to the Skin Department of St. Mary's Hospital, London, etc. With 8 chromolithographs and 17 woodcuts. Pp. 556. Philadelphia: Lea Brothers & Co., 1894.

THE author states in his preface that he has endeavored to set forth the clinical facts and the principles of treatment of skin-diseases based on the result of modern research as to their causes. The work is essentially

clinical and practical in its scope, for more extended details of morbid anatomy the reader being referred to the larger treatises on the subject.

We have no hesitation in saying that the book contains a complete summary of our knowledge of skin-diseases, and that the subject has been presented in an attractive form. The matter is quite up to date, and there are sufficient references to the studies of other observers to make the reading interesting. The book is not large, but there is a great deal in it. The information is for the most part just such as the physician in general practice requires to aid him in understanding the pathology and treatment of cutaneous diseases. In following the teaching of Mr. Morris the student or medical man may be assured that he is in safe hands. The book is one of the best of the day.

A number of original excellent chromo-lithographic plates from the author's cases add value to the work. They are from the brush of the well-known English medical artist, E. Burgess, Esq., who has done so much to depict English cutaneous medicine. There is only one criticism to make concerning this artist's work, and that is that the coloring is usually too high.

THE NURSE'S DICTIONARY OF MEDICAL TERMS AND NURSING TREATMENT. By HONNOR MORTEN. Philadelphia: W. B. Saunders.

IN glancing over this booklet our eye has caught many things similar to the following:

Cesarean (spelled *Caesarian*) *Section* is said to have been "first performed by a Dublin midwife." Of *Cataract*, "the operation is usually iridectomy." Of *Cleft Palate*, the nurse is told that "the child must be sat (*sic*) upright when fed, and a long teat employed, and the milk poured slowly to the back of the throat. It cannot suck, as it cannot create a vacuum, and the milk is liable to return down the nose. Operation usually takes place about two or three years of age." As to *Neurasthenia*, "it (the treatment) may include seclusion, in which case we get on to Weir Mitchellism"—a subject the author also fears to tackle in any other place. *Vivisection* is defined as "scientific internal examination of a living animal;" the *Argyll-Robertson Pupil*, "one which does not contract when subjected to light;" and the *Æquator Oculi* as "the line formed by the lids when the eye is closed."

LECTURES ON AUTO-INTOXICATION IN DISEASE, OR SELF-POISONING OF THE INDIVIDUAL. By CH. BOUCHARD, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospitals, Paris. Translated, with a Preface, by THOMAS OLIVER, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-upon-Tyne; and Examiner in Physiology, Conjoint Board of England. 8vo., pp. 302. Philadelphia: The F. A. Davis Co., 1894.

As the title indicates, the matter contained in this book represents a series of lectures upon the self-poisonings or auto-intoxications to which individuals are liable through processes of malfermentation that may occur in the intestinal tract. In very recent times this subject has attracted considerable attention, particularly in its bearing upon the induction of susceptibility to specific infections, and the opinion, supported by pretty strong argument, is now being advanced that specific infective processes of the alimentary tract are usually, if not always, preceded by lowering of tissue-resistance through either the local or constitutional action of poisons resulting from excessive fermentation, or from the occurrence of abnormal fermentative processes, the products of which act as direct poisons to the animal organism.

A large portion of the book is given to the consideration of the toxic products in urine, a subject to which Bouchard has paid special attention. The toxicity of the fluids and of the other contents of the intestines receives careful consideration, and the poisonous processes accompanying typhoid fever and cholera are also taken up in detail.

The subject is interesting, instructive, and of the utmost importance, and the book contains much upon which we can reflect with profit.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1890–91. Two volumes, pp. xxx, 1514, and Index. Washington: Government Printing Office.

THESE volumes contain a large amount of statistical and descriptive matter concerning general education, both foreign and domestic, but not much of direct interest to medical teachers. The important points bearing on medical education have already been made generally known through essays by Dr. Bayard Holmes. It is to be regretted that the publication appears so tardily. It would be quite impossible to even summarize in the space available here the topics covered in the two volumes. In an account of the development of education in Southwestern Virginia, the work of Thomas Jefferson is referred to with much praise. A considerable amount of space is given to the topic of legal education in this country and in Europe.

NEWS ITEMS.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	Oct. 1
College of Physicians,	1st Wednesday of month, Sept.—June.	Oct. 3
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	Sept. 18
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	Oct. 19
Section of Otology,	1st Tuesday of month, Oct.—May,	Oct. 2
Section of Surgery,	2d Friday of month, Oct.—May.	Oct. 12
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	Sept 12
Neurological Society,	4th Monday of month, Oct.—April.	Oct. 23
Obstetrical Society,	1st Thursday of month, Sept.—June.	Sept. 6
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	Sept. 13

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	Aug. 29, 30	Jefferson, N. H.
American Association of Genito-urinary Surgeons.	May 28-31, 1895	Washington, D. C.
American Association of Obstetricians & Gynecologists.	Sept. 19-21	Toronto, Ont.
American Electro-therapeutic Association.	Sept. 25-27	New York City.
Association of Military Surgeons of the United States.	May, 1895	Buffalo, N. Y.
Canadian Medical Association.	September	St. John, N. B.
Idaho State Medical Society.	Sept. 10-12	Boise, Idaho.
Illinois State Medical Society	May 21, 1895	Springfield, Ill.
International Congress of Hygiene and Demography.	Sept. 2-9	Budapest, Austria.
Medical Association of the State of Alabama.	April 16-19, 1895	Mobile, Ala.
Medical Society of the State of California.	April 16, 1895	San Francisco, Cal.
Medical Association of Georgia.	April 17, 1895	Savannah, Ga.
Medical Society of the State of New York	Feb. 5, 1895	Albany, N. Y.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of the State of Tennessee.	April 9, 1895	Nashville, Tenn.
Medical Society of Virginia.	October.	Richmond, Va.
Medico-Legal Society.	Dec. 12	New York.
Mississippi Valley Medical Association.	Nov. 20-23	Hot Springs, Ark.
New Hampshire Medical Society.	May 30, 31, 1895	Concord, N.H.
New Mexico Medical Society.	September.	Albuquerque, N. M.
New York State Medical Association.	October 9-11	New York City
Ohio State Medical Society.	May 15, 1895	Columbus, O.
Southern Surgical and Gynecological Association.	Sept. 13-15, 1894	Charleston, S. C.
Texas State Medical Society.	April 23, 1895	Dallas, Tex.
Tri-State Medical Society.	October 9-11	Atlanta, Ga.
Vermont State Medical Society.	October 11, 12	Montpelier, Vt.

The Cholera.—One new case of cholera and one death were reported in Haarlem on August 12th, and six new cases in five other towns in Holland. Two new cases were reported at Amsterdam on August 13th, and one in Utrecht; one death in Zaandam and one in Beverwyck. The disease is also said to be spreading in Czornowitz, the capital of Bukowina. A death from cholera was reported on August 12th at Nippes, two miles from Cologne. There were reported in St. Petersburg, from August 5th to 11th, 156 cases of cholera and 101 deaths. Forty-five cases of cholera and fifteen deaths were reported in the Johannisburg district of Prussia up to August 12th. Eleven cases of cholera and seven deaths from the disease were reported in the Dantzig district on August 14th.

The Plague.—It is reported that Kitasato, the distinguished bacteriologist, who was sent by the Japanese Government to investigate the epidemic in China, has discovered what is believed to be the specific etiologic factor of the plague. This is described as a bacterium resembling that of chicken-cholera, appearing joined in pairs, found in the blood both during life and after death, and which, inoculated upon lower animals, gives rise to symptoms resembling those of the original disease, and terminating fatally.

The Consulting Staff of the Wernersville Hospital for the Chronic Insane has been constituted as follows:

Physicians: Dr. William Pepper, Philadelphia; Dr. William W. Guilford, Lebanon; Dr. W. F. Muhlenburg, Reading.

Surgeons: Dr. DeForest Willard and Dr. William W. Keen, Philadelphia; Dr. W. Murray Weidman, Reading.

Gynecologists: Dr. Anna E. Broomall and Dr. Florence Q. McQuaide, Philadelphia.

Ophthalmologist: Dr. Charles A. Oliver, Philadelphia.

Neurologists: Dr. Wharton Sinkler, Dr. James Hendrie Lloyd, and Dr. Francis X. Dercum, Philadelphia.

The Staining of Tuberculous Sputum.—We are informed that Dr. A. L. Benedict, of Buffalo, is at work on a method of staining tuberculous sputum in bulk, so as to obviate the manipulation of the cover-glass and allow the suspected material to be deposited on the slide from a pipet.

The American Gynecological and Obstetrical Journal is the name by which the New York *Journal of Gynecology and Obstetrics* will hereafter be known.

Max v. Pettenkofer has resigned the chair of hygiene in the University of Munich, and has been succeeded by Hans Buchner.

BOOKS AND PAMPHLETS RECEIVED.

The Relation or Coincidence of Diseases of the Upper Air-passage to those of the Genito-urinary and Rectal Organs. By J. G. Carpenter, M.D. Read before the Mississippi Valley Medical Association. Cincinnati, 1892.

Lehmann's Medicin. Hand-Atlanten. Band IV: Atlas der Krankheiten der Mundhöhle, des Rachens und der Nase. Von Dr. Ludwig Grünwald. München: Verlag Von J. F. Lehmann, 1894.

A Supplementary Paper upon Supra-vaginal Hysterectomy by the New Method, with Report of Additional Cases. By B. F. Baer, M.D. Reprinted from the Transactions of the American Gynecological Society, Vol. XVIII, 1893.

Treatment of Myopia without Glasses. By W. H. Bates, M.D. Reprinted from the Medical Record, 1894.

Tumors, Innocent and Malignant. By J. Bland Sutton, M.D. Philadelphia: Lea Brothers & Co., 1893.

A Case of Ringworm of the Scalp Simulating Alopecia Areata. By Henry H. Whitehouse, M.D. Reprinted from the Journal of Cutaneous and Genito-Urinary Diseases, 1893.

State and Municipal Control of Infectious and Contagious Diseases. By John Winters Brannan, M.D. Reprinted from the Medical Record, 1893.

Incompatibility. Lecture delivered before the Medical and Pharmaceutical Students of the University of Texas. By James Kennedy, Ph.G., M.D. Galveston, 1893.

The Absorption of Immature Cataract, with Restoration of Vision. By J. Hobart Egbert, A.M., M.D., Ph.D. Reprinted from Notes on New Remedies, 1893.

The Forms of Peritonitis, their Relation to Appendicitis, and the Etiology of Each. By Roswell Park, A.M., M.D, Reprinted from the Medical Age, 1894.

A Critical Review of the Seventh Decennial Revision of the Pharmacopeia of the United States of America. By George M. Beringer, A.M., Ph.G. Reprinted from the American Journal of Pharmacy, 1894.

Report of a Case of Cerebral Tumor, Diagnosed by Focal Symptoms, with Operation; Successful Removal of Tumor and Exhibition of Specimen. By D. A. K. Steele, M.D. Reprinted from the Journal of the American Medical Association, 1894.

Bibliography of College, University, and Social Settlements. Compiled by M. Katharine Jones. Pamphlet.